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A

WEEKLY REVIEW OF MEDICINE.

EDITED BY
FRANK P. FOSTER, M.D.

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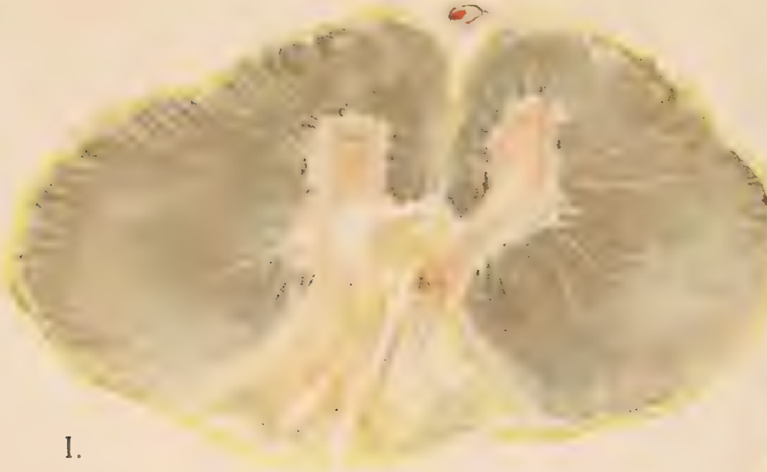

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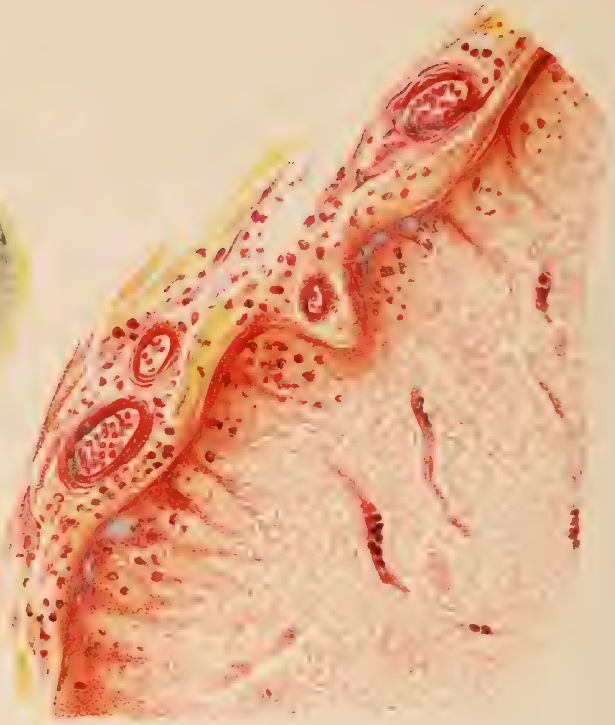

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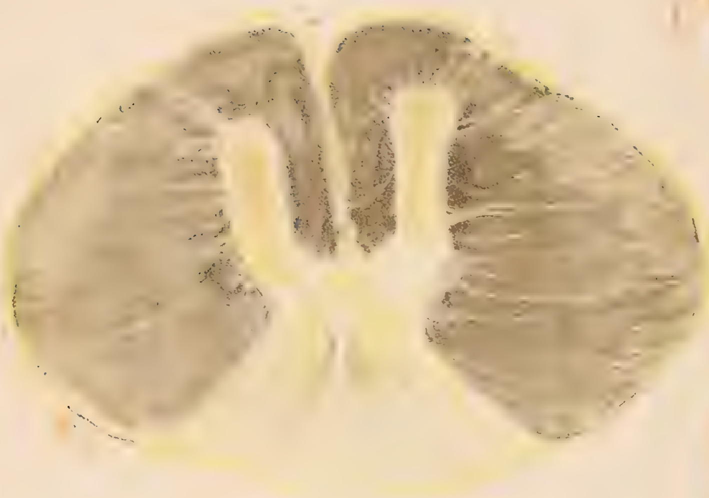

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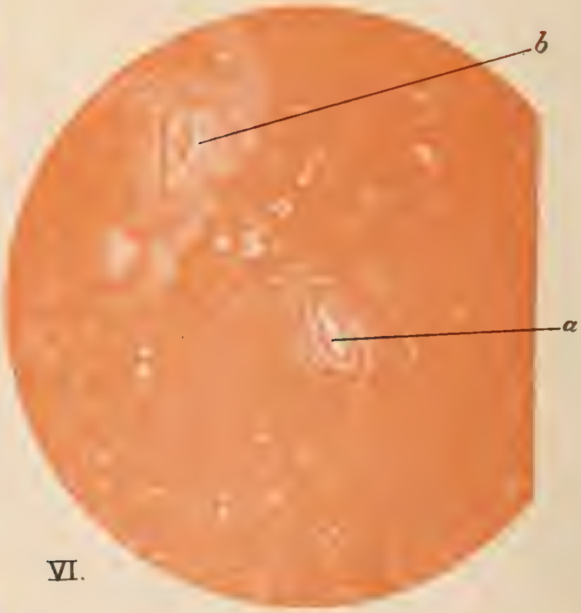

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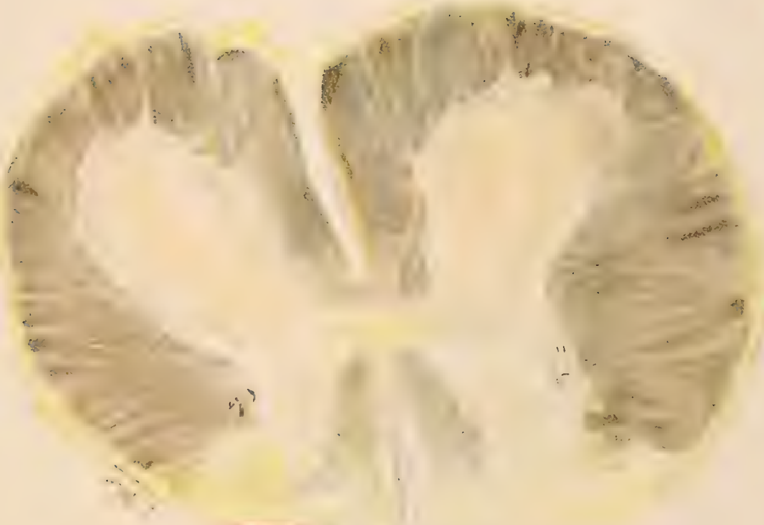

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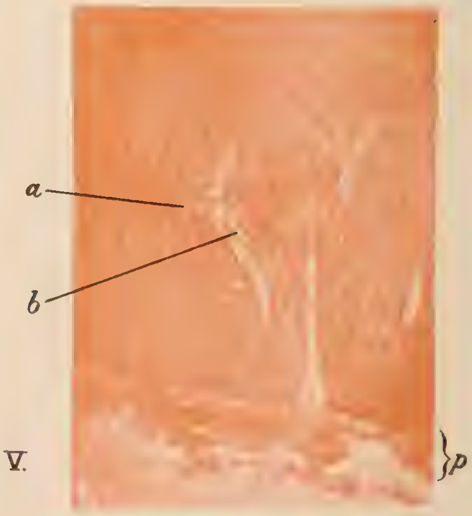

V.

DR. B. SACH'S ARTICLE ON SYPHILIS AND TABES.

THE NEW YORK MEDICAL JOURNAL, JANUARY 6, 1894.

Original Communications.

SYPHILIS AND TABES DORSUALIS.[*]

BY B. SACHS, M. D.,
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CONSULTING NEUROLOGIST TO MOUNT SINAI HOSPITAL;
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OF the causal relation between syphilis and tabes there can no longer be any doubt. The question has been definitely settled by Erb's [†] recent statistics proving previous syphilitic infection in at least eighty-nine per cent. of tabic patients and in only twenty-two and a half per cent. of hospital patients suffering from other diseases. This latter percentage is based upon an analysis of 5,500 cases. The importance of syphilis as an ætiological factor of tabes has received additional support, to my mind, from the utter failure of Leyden [‡] to break down the value of Erb's statistics.

But aside from mere statistical evidence, which is never entirely unobjectionable, the close relation between syphilis and tabes is brought to light in other ways. I will mention a few facts briefly in the order in which they have impressed themselves upon me:

1. The frequent development of general paresis after tabes and of tabic symptoms in the course of general paresis, the latter also being much more apt to occur in syphilitic subjects than in others.

2. Cases of tabes, and for that matter of general paresis as well, occurring in women and in very young subjects are invariably preceded by syphilis, which may be acquired or hereditary.

3. In cases of undoubted cerebral syphilis or of cerebro-spinal syphilis, symptoms occur which, on the one hand, may resemble general paresis, and on the other tabes.

My attention has been directed particularly to this last point during the past three years, and I have given details in previous articles.[#] I have in mind at this writing a number of cases of undoubted cerebral and cerebro-spinal syphilis in which the symptoms characteristic of syphilitic disease have been associated with the Argyll-Robertson pupil and with a loss of knee-jerks. In two cases, after the recovery from cerebral syphilis, the knee-jerks returned and the pupils began to contract, though sluggishly, to light. In one case, however, in which the mental symptoms of syphilis and a syphilitic hemiplegia at the age of thirty-five were entirely recovered from more than a year since, and the pupils react normally, the knee-jerks are still absent. I am certain that this is not a case of tabes; but there are, no doubt, changes in the spinal cord simulating those of tabes in a topographical and physiological sense.

4. Those who have wished to dispute the importance of syphilitic infection in the causation of tabes have always made much of the failure of antisyphilitic measures to cure or even to improve tabes. Its failure to do this would not prove much either way, for in very manifest specific diseases in other organs and in the brain itself it is often quite as useless; but Dinkler,[*] reporting upon Erb's cases, gives good proof of improvement in fifty-eight per cent. of cases of tabes. Remembering the destructive effect of the ordinary syphilitic process, such a result seems gratifying enough. Such a percentage of improvement will not, I think, surprise those of us who have been in the habit of using vigorous specific treatment in all but the most inveterate cases of tabes.

In private and dispensary practice I have prescribed mercurial and iodide treatment in all cases of tabes which have come under observation at a reasonably early period of the disease. The cardinal symptoms may not have disappeared, but the treatment has a most marked effect upon those symptoms which may be, and I have no doubt often are, due to purely syphilitic lesion. I refer particularly to the ocular palsies, to lightning pains, and to the characteristic gait. I can add to this the optic-nerve atrophy in rare instances.[†] It is a satisfaction to know that even this most distressing of tabic conditions can be improved, if in its incipiency, by prompt specific treatment.

The temptation is great indeed to dilate upon one's own experience in this special field of neurology, but there would be little gain for you or for me were I to add another stone to a structure that is complete and strong enough as it now stands.

But as soon as we acknowledge syphilis to be the prime cause of tabes dorsualis, our troubles begin in dead earnest, and a number of interesting questions arise that call for response or at least for investigation. Let us take up the clinical inquiry first.

Like general paresis, tabes is a convenient generic term. The greatest number of cases included under these clinical terms are no doubt due to the morbid processes most frequently present in these cases, say in the one set of cases to a leptomeningitis of the convexity with atrophy, and in the other series to a posterior spinal sclerosis;

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[*] Read before the American Neurological Association, July, 1893.

Explanations of the Plate.—Figs. I, II, III, and IV are reproduced from drawings after specimens. Figs. V and VI are photographic reproductions (in color).

Fig. I. Cross section of the cervical cord, showing degeneration of the posterior columns and meningeal infiltration (Pal's method, specimen slightly twisted; low power).

Fig. II. Cross section of the dorsal cord. Fig. III. Cross section of the lumbar cord; both showing degenerated areas (light), thickened meninges, and altered blood-vessels at low power (Pal's method).

Fig. IV. A portion of the posterior column, with its meningeal covering, showing infiltration of the cord, and changes in the pia mater—more highly magnified (borax-carmin stain).

Fig. V. A portion of the posterior column of the lumbar cord. Low power. Infiltration of pia (*p*) and slightly sclerosed tissues.

Fig. VI. A part of the same more highly magnified; *a*, typical endarteritis in the midst of degenerated tissue; *b*, altered blood-vessel cut lengthwise; sclerosis not so marked as at higher levels.

[†] *Berlin. klin. Woch.*, 1891, Nos. 29 and 30.

[‡] *Ibid.*, 1892, Nos. 17 and 18.

[#] *N. Y. Med. Jour.*, Sept. 19, 1891; also article on Syphilis in Morrow's *System*.

[*] *Berl. kl. Wochenschr.*, 1893.

[†] Such improvement has been noted in a patient treated in my department at the New York Polyclinic.

but can we during life recognize those cases in which syphilis is not only the ætiological factor that it is in most cases of tabes, but in which syphilis is the active morbid process responsible for one or more symptoms? A suspicion which I first expressed four years ago in an article on Disease of the Midbrain Region * has been growing upon me since—that supposed nuclear troubles may be syphilitic, and also that the cases of tabes beginning with ocular palsies are apt to be cases of cerebro-spinal syphilis. In the light of further experience and observation I am willing to modify this statement, maintaining merely that in these cases an active syphilitic process—say a specific infiltration at the base—is apt to be associated with a genuine tabic sclerosis or to precede, by an interval of some months or years, the development of a genuine sclerosis. Relying upon this argument, I have insisted upon the possibility and probability of improvement in these cases, and in these patients the result of treatment has been most satisfactory. Only a year ago I was consulted by a young man recently married, who presented the symptoms of tabes. A fellow neurologist, who was evidently not so firm a believer as I am in the Erb-Fournier theory, thought that the patient would get along as well under galvano-faradization of the spine and a little iodide as under any other treatment; but the early occurrence of ocular palsies, with Argyll-Robertson pupil and loss of knee-jerks, without other symptoms of importance, made me urge antisyphilitic treatment. Let me simply report the prompt disappearance of the palsy, an improvement in the pupillary reflexes, and great improvement in locomotion, as well as a return of one knee-jerk under Jendrassik's test. These cases of cerebro-spinal syphilis simulating tabes can also be recognized by an unusual irregularity of development of the symptoms; they are the cases in which the light reflex is lost in one eye very much earlier than in the other, or while the one is lost the other remains normal for years if not for all time; as in other syphilitic conditions and with other symptoms of syphilis, the pupillary symptoms are subject to great variation; and, above all, if you find that one or both pupils respond neither to light nor during accommodation, however much the other symptoms may point to tabes pure and simple, you may well be suspicious of an active syphilitic process.

So much for clinical facts. We must now take up the far more important questions of pathology. Have we any evidence that a syphilitic cerebro-spinal lesion has given rise to symptoms which could not be distinguished from true tabes? Have we evidence to prove that the two lesions—those of syphilis and tabes—are frequently associated? And can we prove that the morbid changes of tabes—I mean the widespread sclerosis, the changes in the peripheral nerves, etc.—are directly due to syphilitic infection?

The first two questions can be answered very positively. Hoffman and Kuh,† Dinkler,‡ and others have reported cases which during life were diagnosticated as cases of tabes which after death were found to be cases of specific leptomeningitis invading chiefly the posterior horns and columns. I have shown elsewhere * that this specific meningeal infiltration invades the spinal cord in the majority of cases in the vicinity of the lateral columns; hence the frequency of spastic cases of spinal syphilis; but if it happens to invade the anterior or posterior surfaces, the clinical symptoms will resemble far more closely those of anterior poliomyelitis or of progressive muscular atrophy on the one hand, and of tabes dorsualis on the other. The gradual invasion of the posterior horns and columns, the progress rather than the retrogression of the morbid process, particularly in the absence of active treatment, will lead naturally enough to the development of symptoms very like those of genuine tabes.

The second question—whether we have evidence that an active syphilitic process is associated with a posterior sclerosis—I can answer affirmatively by evidence which I shall now furnish you.

The history of the case I will report briefly, as it was not distinguished in any respect from the ordinary cases of tabes. The patient had served me on several occasions as a typical example of tabes dorsualis in my lectures to the students. There was no more reason to suspect an active syphilitic process in this case than in any other of the hundreds of cases of tabes that one sees.

The patient, L. K., an inmate of the Montefiore Home, aged forty-five years, began to complain, three years and a half previous to my first examination, of excessive pain in the region of the stomach, followed by vomiting, such spells occurring at irregular intervals. The patient stated that no physician seemed able to relieve him. A physician who saw him about six months after these attacks began examined him more closely and noted very marked ataxia, and a little later another physician made the diagnosis of locomotor ataxia, finding pains in both legs, loss of knee-jerks, Argyll-Robertson pupil, gastric crises, and difficulty in micturition.

Two years after the supposed onset of the disease the patient was admitted to the home. There was not the slightest doubt about the diagnosis. He had contracted pupils which responded a little during accommodation, but were insensitive to light; he had gastric crises of distressing intensity at varying intervals, extreme ataxia, marked Romberg symptoms, slowness of sensory conduction, incontinence of urine, and cystitis.

This condition remained about stationary until two months before his death. The ataxia became so marked that he could not stand or walk; the bladder trouble increased, and bedsores developed, from the effects of which the patient died without at any time having shown paralysis or any symptoms but those of tabes pure and simple.

The autopsy was performed by me in the dead of night a few hours after death. I was not allowed to remove anything but the spinal cord. I was anxious to have the cord in order to prepare a series of sections of genuine tabes for class-room demonstration. On opening the dura I was surprised to find a thickened gelatinous mass covering the

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* *Am. Jour. of the Med. Sci.*, March, 1891.

† *Arch. f. Psych.*, xxii. ‡ *Neurolog. Ctrlbl.*, xi, 1892, p. 389.

* *New York Medical Journal*, 1891.

pia from the lower cervical to the upper lumbar segments. On the ventral surface there was no trace of this gelatinous mass, but the pia appeared thickened on both surfaces and of leathery consistence. The cord was hardened very carefully in bichromate-of-potassium solution of increasing strength, and innumerable sections were stained by the Weigert and Pal methods and by eosin and Delafield's hæmatoxylin. In this work I had the valuable assistance of my associate, Dr. Alfred Wiener.

The study of the sections (Figs. I–III) and of the drawings which I present will reveal the existence of a diffuse sclerosis of the posterior columns from the lower cervical to the lumbar enlargement. This sclerosis is most marked in the cervical and dorsal segments, and includes the zone of Lissauer. In the lumbar segments the anterior and median portions of the posterior columns are altered but little. A few cells of Clarke's column could be made out only in the lower dorsal segments. The sclerotic tissue differs in no respect from the classical order of spinal sclerosis. You will notice on the Weigert and Pal specimens that only a very few fibers, scattered here and there through the sclerotic area, have taken the stain, showing the usual destruction of nearly all the fibers at this late stage of the disease. No sclerosis or degeneration of fibers has been noticed in any other part of the cross-section of the cord. The anterior gray matter, too, is entirely normal. The one very marked change to be noted most easily on sections from the dorsal and lumbar segments is the widespread meningeal infiltration; the pia is firmly agglutinated with the substance of the spinal cord, more particularly in the region of the posterior and lateral columns. The posterior roots of the dorsal and lumbar segments are distinctly degenerated, and at almost every level changes characteristic of syphilis could be made out in the small blood-vessels lying between the bundles of nerve fibers. These changes were most marked in the lumbar region, in which the sclerosis was developed least. The pia is characterized by an invasion and proliferation of round cells and by very typical changes in its blood-vessels, large and small (Fig. IV). The larger arteries show enormously thickened walls, the lumen of the arteries often being reduced to one third of their normal diameter and completely blocked by clots of blood. The veins are not so distinctly altered. On sections from the lumbar enlargement (Figs. V and VI) diseased arteries can be seen in an area in which relatively few fibers have been destroyed, but the specific process in the pia and in the cord is distinct enough.

In addition to the posterior spinal sclerosis we find, therefore, a syphilitic leptomeningitis invading the cord at various levels and occasionally invading a distinctly sclerotic area; also a very typical specific arteritis. Whether it is an endarteritis or a mesial arteritis can not be determined easily; certain it is, however, that in the majority of the blood-vessels examined the innermost coat has undergone the greatest changes.

I have paid special attention to the relative development of the specific and sclerotic process, with the idea that the condition of the blood-vessels may have a bearing upon the genesis of the sclerotic tissue. But this part of the inquiry has been rather unsatisfactory, for the sclerotic and specific processes often merge into one another. In the sclerotic area there are very few blood-vessels, and these are so small that the characteristic changes could not be studied with ease. The arteries of the posterior and lateral divisions were distinctly altered, but the anterior spinal artery and the antero-lateral ramifications were subject to changes quite as distinct; yet there was no disease in the areas supplied by these vessels. It will also be observed that the posterior roots and root fibers, with the blood-vessels contiguous to them, are altered, as are the fibers and blood-vessels of the cord itself.

Post-mortem findings demand a rational explanation. It will not do to make more of them than the facts warrant. In this case we have the evidence of a syphilitic process superimposed upon the sclerosis. I believe the sclerosis to have been the first in the field; the specific infiltration is of later date. Inasmuch as it invaded very much the same areas as are occupied by the sclerosis, we can readily understand why this invasion did not give rise to new symptoms. Since the posterior horns and columns were primarily affected, an invasion of the lateral columns was not characterized by the typical symptoms of disease of the lateral columns. The same thing occurs in cases of combined sclerosis—say in ataxic paraplegia—in which disease of the posterior columns either forbids the development of characteristic spastic symptoms or wipes out all clinical proof of lateral-column affection as soon as it (the posterior sclerosis) is in the ascendant.

Whether disease of the blood-vessels preceded the development of the sclerosis can not be answered offhand; it is possible and even probable, although we must not forget that the sclerosis may have been started some time before the first clinical manifestations were in evidence. This very question will repay further inquiry, and I would urge the most rigid examination of the blood-vessels in every case of tabes, but, above all, in cases of tabes with death at an early period of the disease. I must content myself to-day with having furnished post-mortem proof of the coexistence of the syphilitic and sclerotic processes in a case in which the former was not suspected.

We have now reached the third division of our inquiry. Have we any evidence to prove that the tabic process is due to syphilitic infection?

I believe that I need not insist on the fact that the "tabic process" is not merely a "posterior spinal sclerosis." Even if we do not subscribe to the full to Jendrassik's views * that tabes is more of a cerebral than a spinal disease, there is enough of truth in his facts and arguments to make tabes a cerebro-spinal disease; but the same is true of dementia paralytica, and the same is unqualifiedly true of syphilis in its effect upon the nervous system.

For the sake of argument, let us suppose the sclerosis of the posterior columns to be the chief seat of the disease. The most advanced views of the anatomy and physiology of the cord, based upon the researches of Flechsig, Lissauer,†

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* *Arch. f. klin. Med.*, xliii, 1888.

† *Arch. f. Psychiat.*, xvii, p. 377.

and others, have shown the posterior horns and columns, including Lissauer's tract and the *bandelettes externes* of Charcot, in which the changes of tabes first appear to be, as it were, accessions to the cord, and to represent in the cord, quantitatively and qualitatively, the entrance of posterior root fibers at each level. Instead of describing tabes as a posterior spinal sclerosis, it would be much more correct to call it a degeneration of posterior root fibers as they enter into the gray and white matter of the cord.

Next comes the question whether or not this degeneration is a primary affair. Recent investigations render primary disease of any white fibers of the central nervous system highly improbable. Degeneration occurs only if the influence of the trophic cells is disturbed or cut off. The trophic cells of the motor fibers are supposed to be in the cortex and in the anterior horns of the spinal cord. The trophic cells of the sensory white fibers are situated in the spinal ganglia and in the terminal nerve bodies in the peripheral organs, chiefly the skin and muscles. Marie, in his remarkably lucid lectures on Diseases of the Spinal Cord, thinks that degeneration of the posterior columns would ensue only upon disease of these terminal nerve organs or upon disease of the spinal ganglia. The investigations into the changes in the terminal nerve endings have not yet been made with sufficient detail to warrant any conclusions, and the examinations of the spinal ganglia, as Marie confesses, have been partly negative. But if we accept these physiological views, must we find disease in one of these two ganglionic centers for sensory nerves? I think not. Keeping in mind the analogy with the motor fibers, it is clear that degeneration ensues not only upon disease of the ganglion cells themselves, but upon disease in any part of the motor tract cutting off this trophic influence. Thus descending degeneration follows not only upon disease of the cortical motor areas, but also upon disease in the internal capsule or in any part of the pyramidal tract of the lateral columns, the seat of the disease being, in each instance, at some distance from the trophic cells. Reasoning upon this analogy, ascending degeneration of the white fibers will ensue not only upon disease of the spinal ganglia, but upon a focus of disease between the spinal ganglia and the posterior horns of the spinal cord. This points to the posterior roots and posterior root fibers. Let us also recall that this is the very region in which the effect of disease of the spinal meninges, which is so often due to syphilis, is apt to be first manifested. In this way a relation between the morbid anatomy of syphilis and that of tabes could be explained. This would be an important link in the chain of evidence, but it would lead to the further inquiry whether the syphilitic poison acts through the medium of the blood-vessels, as I think probable, and whether or not the syphilitic virus, the syphilitic toxin, brings about changes in the blood, and whether or not these changes in the blood are the cause of the changes in the walls of the blood-vessels, as would not be unreasonable to suppose upon well-known physiological principles.

Let me remind you also of Tuczek's ergot tabes, due to the action of a substance which is known to have a powerful influence over the action of the vascular system. To call tabes a post-syphilitic disease, as Strümpell does, to make it dependent upon the action of the latent syphilitic virus, is but the first step toward an accurate explanation of the relation between syphilis and tabes.* Before we enter upon the realm of pure speculation let us get at all the hard facts, and let us endeavor to prove tangible changes. "Syphilis and tabes" seemed to me to be a very trite subject only a few years ago. As my studies and reflections were continued, I found this field of inquiry a very inviting one, and I trust I have said enough to show that we have but just turned the first post, and have a hard road to travel before we reach the goal of this inquiry.

LABORATORY INSTRUCTION IN ELEMENTARY COMPARATIVE ANATOMY AND EMBRYOLOGY

WITH LARGE CLASSES OF MEDICAL STUDENTS.†

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(*Prepared for the Section in Anatomy of the First Pan-American Medical Congress.*)

During the past two years I have been engaged in teaching elementary comparative anatomy and elementary embryology to large classes of medical students. In the institution with which I have been connected laboratory instruction in comparative anatomy and embryology has been incorporated into the course of study as two distinct major branches, and each student in the first and second years' course has been expected to pursue the work unless conditioned on account of previous biological training. As a consequence, the classes in these laboratory exercises were large, and my position as a teacher of a compulsory laboratory course in comparative anatomy and embryology in a medical college in the United States, at least, has been a unique one. In the belief that my experience may be of interest to other teachers, I am prompted to bring this subject to your attention and to exhibit to you some samples of class work.

The management of large classes in a biological laboratory exercise involves details, many of which can only be gained by experience. In the first place must come the laboratory itself and the laboratory equipment. In the college in which I have been teaching the laboratory of comparative anatomy and the laboratory of embryology occupy two distinct floors of the laboratory building. Each laboratory room is twenty-five feet wide and one hundred and sixty feet long, and well lighted on the side. The room contains fourteen tiers of desks, each tier consisting of eight single desks arranged in two rows of four each, back to back. It will thus be seen that the laboratory of comparative anatomy, for instance, contains desk room for the accommodation of one hundred and twelve students at a single laboratory exercise. The desks are made of whitewood with a plain top and of the proper height to permit the student to work in the sitting posture. Each desk has a top surface of two feet by three feet and a half, with ample knee space below and a cupboard on the right side provided with a Yale lock and containing two drawers, in which the individual student's equipment may be readily stored. Sinks with hot and cold water supply are arranged about the laboratory convenient of access.

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* The arguments given above are similar in some respects to those advanced by Dr. Spitzka in his article entitled Return of the Patellar Reflex in Tabes Dorsualis, etc., published in the *American Journal of Neurology and Psychiatry*, 1884, p. 433. Dr. Spitzka kindly called my attention to his paper, and, while I regret not having been familiar with it before this article was written, I am pleased to think that we have been led to similar conclusions by independent studies.

† By a mistake this paper was miscarried and did not obtain a reading at the congress. With the paper were several hundred drawings, made by members of the various classes, which were to be exhibited when the paper was read. The illustrations which accompany this article are photographic reproductions of a few of the drawings, and represent a fair average of the character of the work displayed in the whole set returned by the students. The original drawings were on sheets of paper 11 × 8½ inches, and are of course reduced in reproduction. It must be remembered that, with all their advantages, the photo-engravings can not do justice to the original drawings.

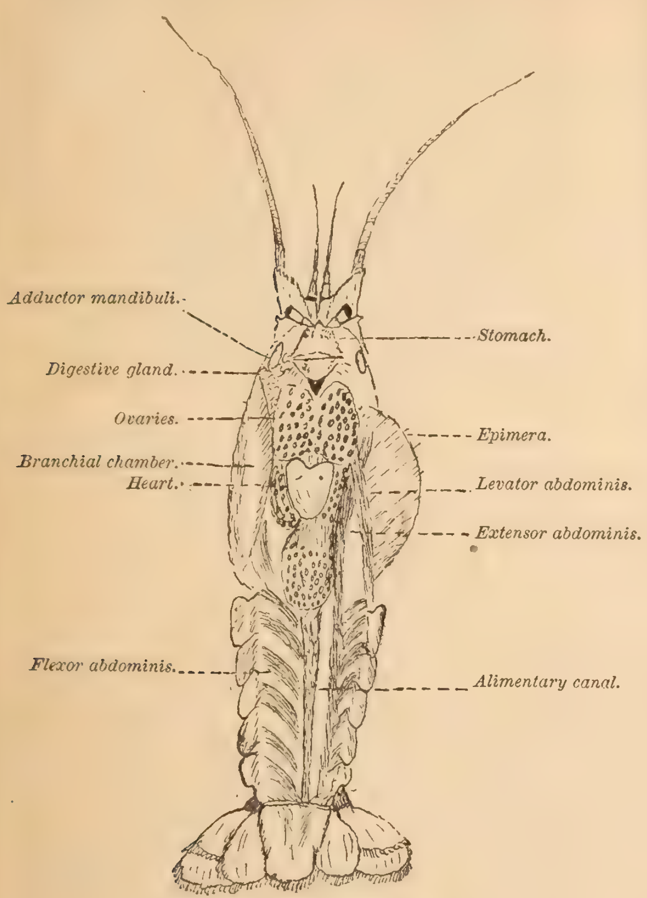

Fig. 1.—F. Weatherford.

The equipment of the laboratory is of such a character that each student obtains and keeps in his locker all the material required throughout the course, with the exception of the microscope, microtome, and an occasional special instrument or staining solution. This outfit is obtained at the opening of the term by the student and kept in his desk. Everything required in the prosecution of the work—as dissecting instruments, slides and covers, drawing paper, pen, ink, pencils, etc.—is furnished in the student's outfit. The microscopes, microtomes, and imbedding baths are kept in the microscope room adjoining the laboratory, and are obtained by the student before entering the laboratory. Each student is provided with a microscope for his individual use. Naturally the equipment of a laboratory in which one hundred students can work during a single exercise, and each student be enabled to prosecute the work independently, involved the necessity of a simple and still complete working outfit. The outfit must be simple and inexpensive as possible, because the multiplication of parts makes the matter of cost a formidable one in fitting out a laboratory on such an elaborate scale. In both the laboratory of comparative anatomy and the laboratory of embryology each one of our students was provided with a simple outfit, sufficiently complete, however, to permit him to carry on independently all the technical work involved in the study.

The text-books which we have employed in comparative anatomy are Huxley and Martin's *Elementary Practical Biology*, last edition, and Martin and Moale's *Dissection of a Rodent.*

The character of these invaluable laboratory guides is too well known to every biologist to need a detailed description. The laboratory exercises in these works are systematically arranged, and full technical directions are given, so that the work of both teacher and student is much lightened by following very closely the instructions outlined. The animals chosen for study during the first

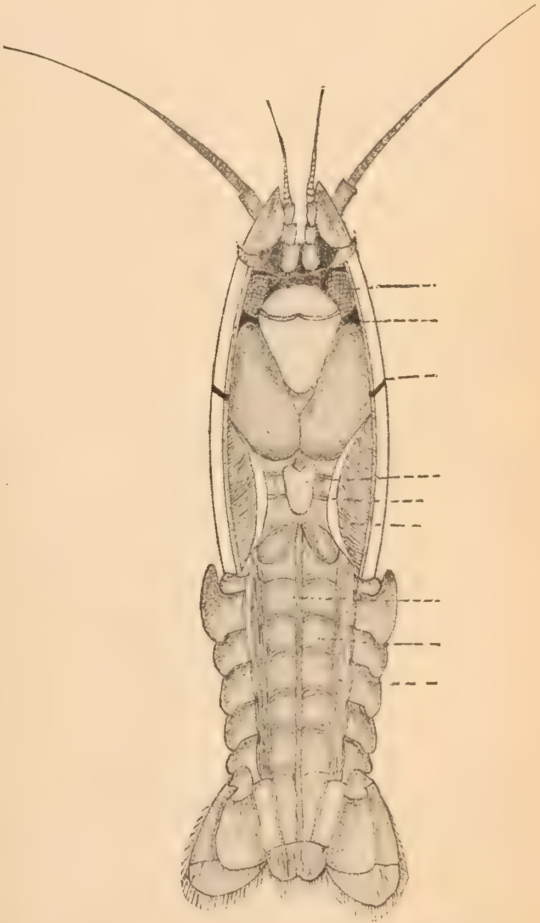

Fig. 2.—Organs of crayfish. F. E Wynekoop.

two courses of instruction in this department were the crayfish and the frog. During the last term the animals dissected were the frog and rat. The time devoted to comparative anatomy by the first year's class was ten hours a week; that is, four laboratory exercises of two hours each and one oral exercise.

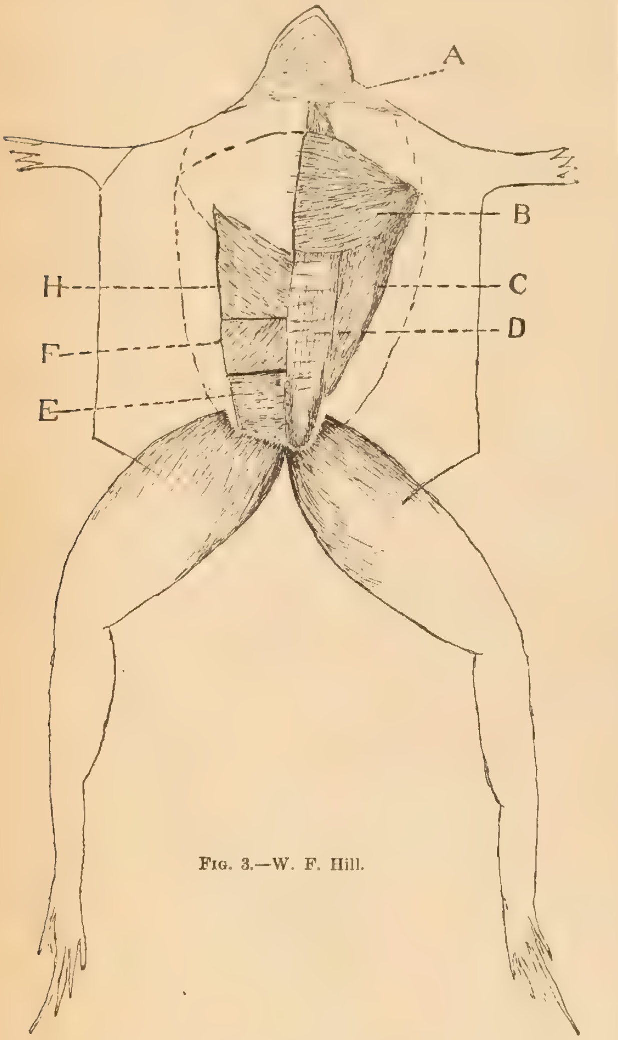

Fig. 3.—W. F. Hill.

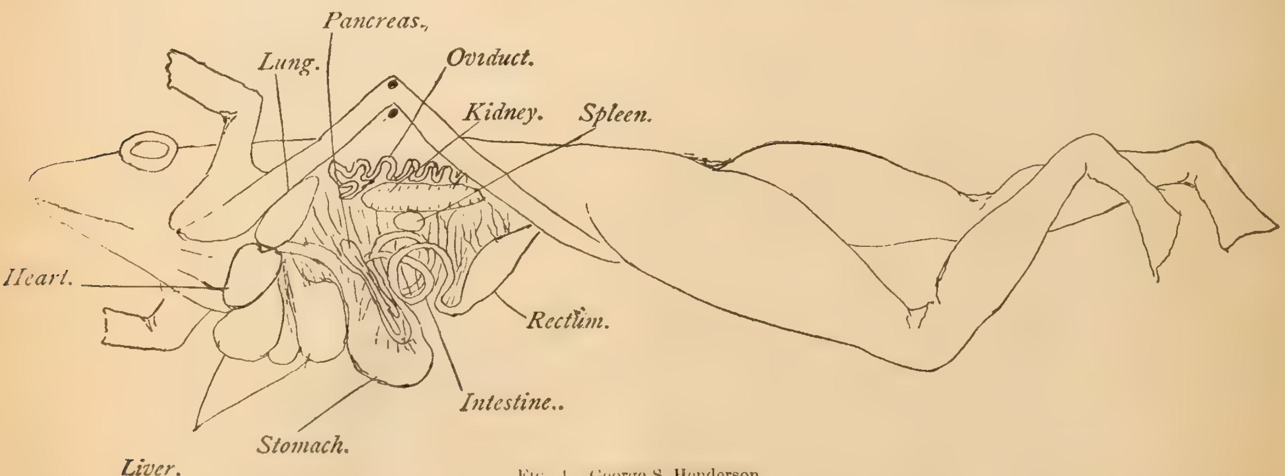

Fig. 4 George S. Henderson.

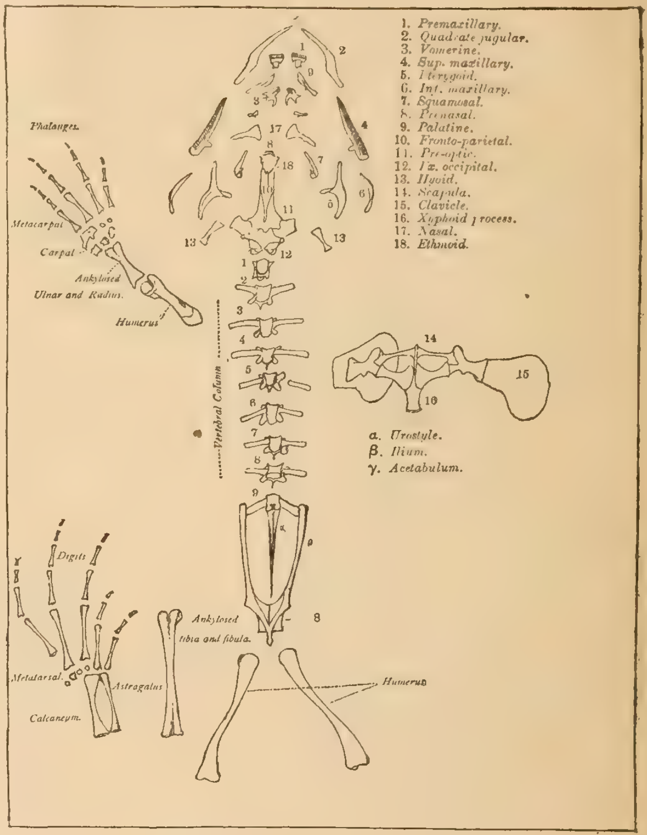

Fig. 5.—Skeleton of bullfrog. C. L. Lénard.

The class in comparative anatomy numbered twenty students during the spring course of 1891–'92, ninety students during the winter course of 1892–'93, and twelve students during the spring course of 1892–'93. Gentlemen who had completed a biological course in any of our colleges were exempt from the work in comparative anatomy. Of the students composing our classes, five per cent. were college graduates, ten per cent. were high-school graduates, and the balance were students who had been admitted to the college on examination, or on the presentation of credentials other than school and college diplomas. In all of these classes not more than half a dozen students had ever taken previous laboratory work in any of the biological sciences. In other words, the classes were untrained in laboratory methods. I believe it is pretty generally understood among teachers of biology that it is very difficult, if not impossible, to introduce a student into the work laid down in Huxley and Martin's *Biology* who has not had a previous elementary training. We did not find this to be the case, for our classes were introduced directly into the exercises on the crayfish and frog as laid down in Huxley and Martin, and each student pursued to the most minute detail each of the dissections prescribed in the laboratory work, with the exception of the portion relating to histology and embryology. All of the preparations—as, for instance, the wet and dry skeletons, the arterial and venous injections—were made by each member of the class.

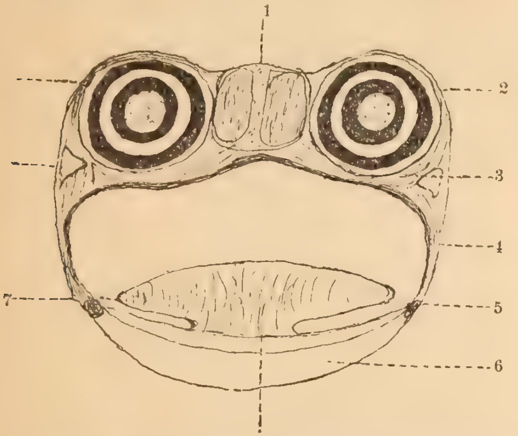

FIG. 6.—Head of frog, transverse section. Lee Weber.
1. Brain. 2. Eye. 3. Eye muscle. 4. Mouth. 5. Jaw bone. 6. Lymph space 7. Tongue. 8. Hyoid.

It will be recalled that the laboratory work on the crayfish, as laid down by the new edition of Huxley and Martin, occupies about fifty closely printed pages; that upon the frog about one hundred and forty pages; and the dissection of a rat, as prescribed by Martin and Moale, occupies seventy pages. It was our constant endeavor to impress upon the student the desirability of a *detailed* study of the types selected, in the belief that a training of this kind was more valuable to the medical student than the cursory examination of a number of types.

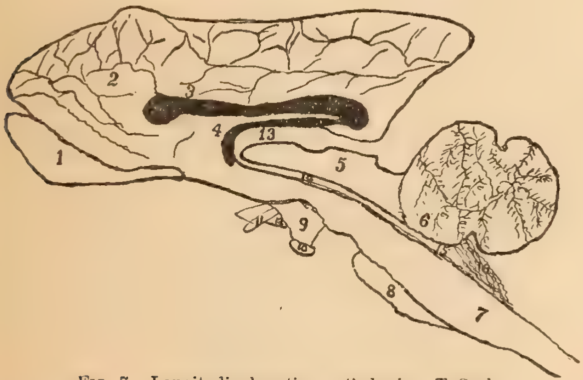

FIG. 7.—Longitudinal section, rat's brain. T. Sachs.
1, olfactory lobe; 2, cerebral hemisphere; 3, corpus callosum; 4, fornix; 5, corpora quadrigemina; 6, cerebellum; 7, medulla; 8, pons; 9, infundibulum; 10, pituitary body; 11, lamina terminalis; 12, tuber cinereum; 13, third ventricle; 14, iter; 15, fourth ventricle; 16, chorioid plexus.

Especial stress was laid upon the drawings, and we look with pride upon the work which the students have turned out in this direction. It is well known that the laboratory guides mentioned have no illustrations. Aside from this, the students were discouraged from looking for illustrated works to guide them in their drawing. I can safely assert that, among all of the students who have thus far taken the work in comparative anatomy and embryology, not more than half a dozen members of these classes possessed or referred to pictures of the objects of their drawings. While every legitimate aid, as instruction by the teachers and reference to meritorious work of other students, was given to the members of the class, copying was discouraged and individuality encouraged. The rough drawings of a given object or dissection were first made in a note-book with pencil during the laboratory hour. These rough drawings were inspected by the demonstrator and directions for improvement often given. Each member of the class was provided with fifty or a hundred sheets of heavy white paper, eight inches and a half by eleven inches in dimensions, and one heavily ruled sheet which was placed under the drawing to outline the field. A set of lithographer's pens and a bottle of India ink was also furnished in the student's outfit. The student was instructed to reproduce his note-book drawings in ink on the sheets provided, improving on the original in every possible manner.

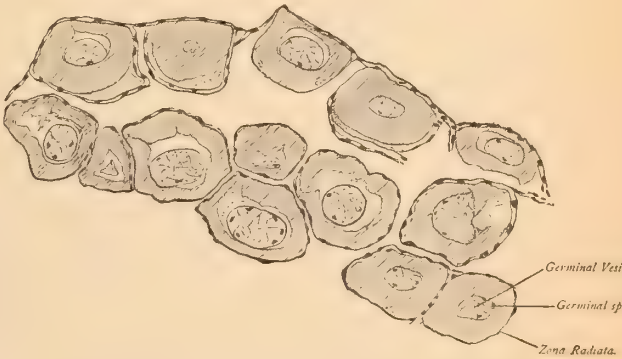

FIG. 8.—Ovary of the salamander (resting stage). H. Hartung.

I have the pleasure of submitting for your inspection some of the many hundreds of drawings which have been returned by the students in the laboratories of comparative anatomy and embryology during the last year. Permit me to say that these drawings represent only a fair average, no effort having been made to select the better productions. They represent two or three samples of the work of about a hundred students. Further, I would say that no member of either of the laboratory classes failed to submit a set of drawings representing his laboratory work, for the drawing was considered an essential feature in determining the grade of the laboratory work. While on the subject of drawings it may be said that we invariably noticed that the best students in the laboratory—that is, the most careful dissectors and most enthusiastic workers—made the best drawings. An examination of these drawings will give an idea of the subjects studied during the course, and of the various dissections and preparations made by the students. As a rule, the drawings were made in plain outline, the student being advised to confine himself to outline work unless especially trained in shading. It will be noticed that while the parts of a given drawing are indicated in some drawings they are omitted in others. This is because the drawings were accompanied by a set of notes, usually written on the same paper as employed in the drawings, and often the drawings were described in these notes.

I have before remarked that the animals chosen for study were the crayfish and frog for the first two classes, and the frog and rat for the last class. We have decided upon the frog and rat as the types for study during our future courses, because of the manifest preference of our students for those types which most nearly approach in structure the higher and more familiar mammals. The frog and rat are especially chosen for several reasons. They are abundant and easily obtained. They are small and consequently easily preserved between the laboratory hours. I am further much in favor of these smaller animals because the more delicate dissections and acute observations required in their study afford, to my mind, a more valuable discipline and a better preparation for the study of human anatomy than could be obtained by the use of larger animals. Finally, we have two most excellent laboratory guides for the study of the frog and rat.

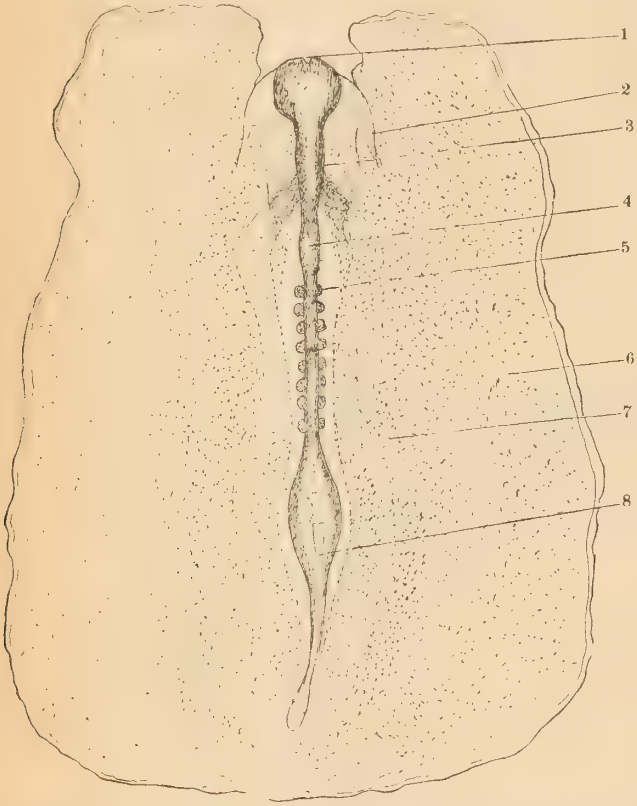

FIG. 9.—Thirty-four hours' chick. C. W. Dulin.
1. Forebrain. 2. Amniotic fold. 3. Midbrain. 4. Hindbrain. 5. Mesoblastic somite. 6. Area opaca. 7. Area pellucida. 8. Primitive streak.

Our object in introducing the study of the crayfish into the work was to acquaint the student with the anatomy of a typical segmented invertebrate as a means of comparison with the vertebrata. I must confess, however, that the students showed a marked dislike for their work on the crayfish and a corresponding preference for the study of the frog. This was in part due to the fact that they were studying human anatomy simultaneously with their course in comparative anatomy, and their constant endeavor seemed to be to find something in their lower animals which they could compare with their human dissection. Many of the well-intended lessons on the comparative anatomy of a typical vertebrate and invertebrate animal were therefore lost; but this was compensated for by the interest and enthusiasm displayed by the class during their work on the frog and rat.

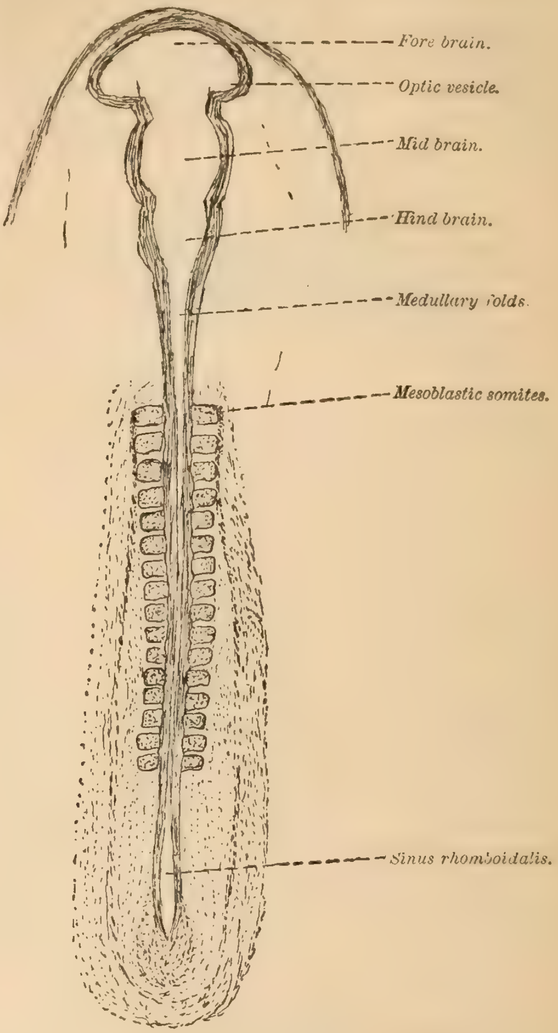

FIG. 10.—Thirty-six hours' chick. B. Feltenstein.

The only addition to the regular work was attempted last winter, when about twenty members of the class undertook an extra month's work after having completed the regular course on the crayfish and frog. As a subject for this work I chose the comparative anatomy of three vertebrate brains, permitting the student to select three brains from the animals suggested. The animals chosen for this study were the frog, turtle, fish, snake, bird (pigeon, hen, turkey), rat, cat, dog, sheep, calf, and man. Each student obtained his own material, made his own dissections, and preserved the specimens. The work was undertaken with the greatest enthusiasm, and, considering the short time

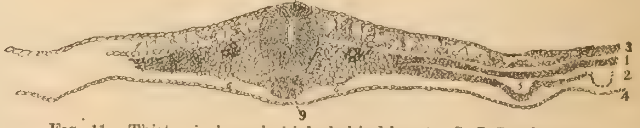

FIG. 11.—Thirty-six hours' chick, behind heart. S. J. Somberger.

left for the study and its occurrence at the end of the college year's work, with examinations coming, I think the results were very commendable. Some of the drawings returned by these students are included in those submitted for inspection. At the completion of this work every member of the class wrote an essay on the three brains studied as a part of his final examination.

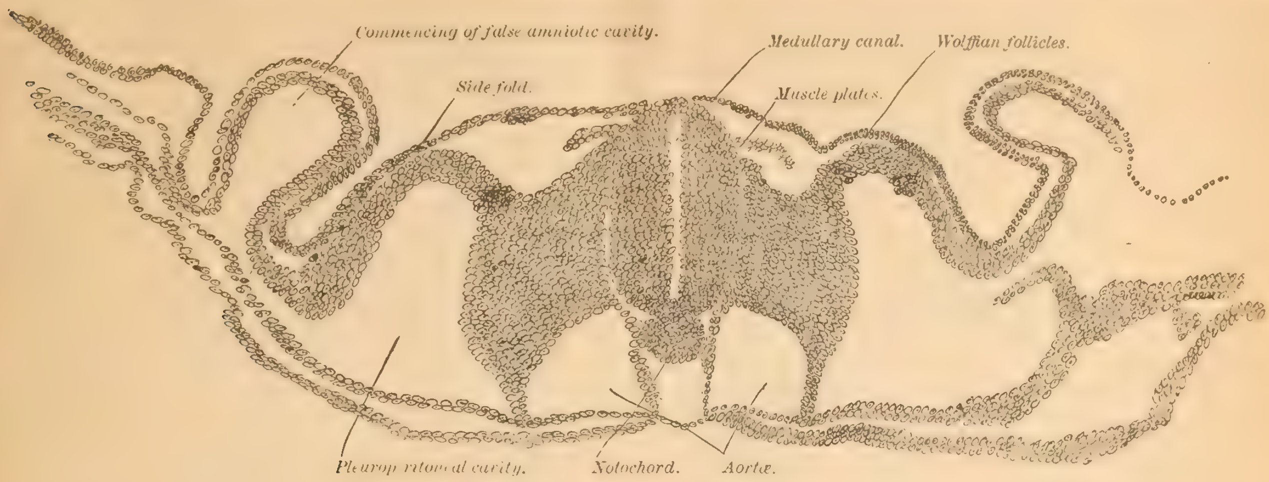

FIG. 12.—Forty-eight hours' chick, behind heart. H. Wagner.

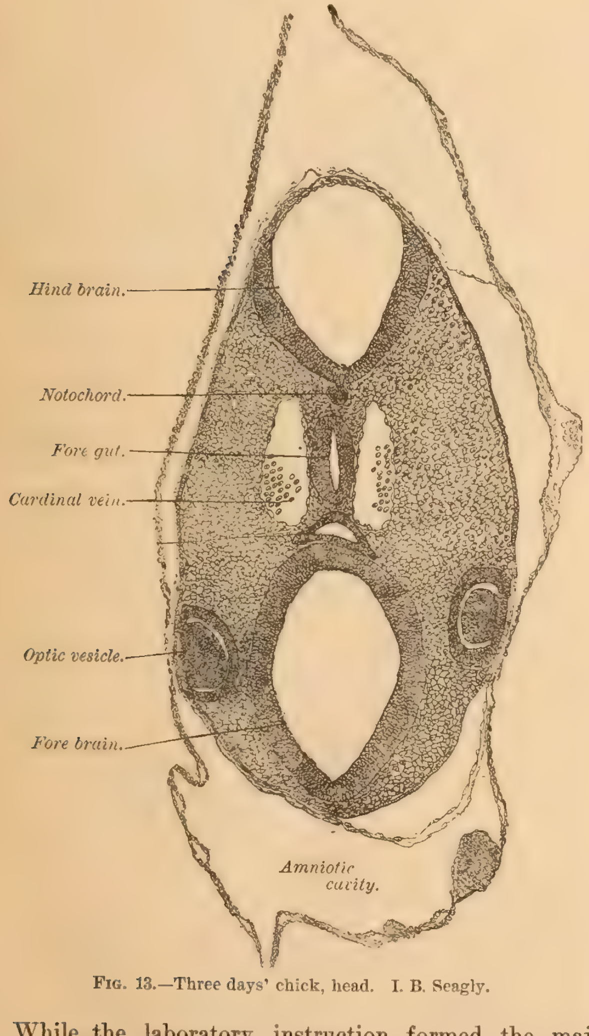

FIG. 13.—Three days' chick, head. I. B. Seagly.

While the laboratory instruction formed the major part of the course in comparative anatomy, some didactic exercises were held, aside from the oral instruction in the laboratory. In fact, as the practical work progressed, many questions were presented to the students' minds which called for answers more elaborate than could be given in the short laboratory hour. Once every week an oral recitation was held. I say recitation, because our exercises were of a general conversational character, with none of the usual lecture element. The students were free to question the teacher in any subject which occurred to them relating to the work. In these oral exercises the constant aim was to encourage the comparative method of study, and to impress upon the student the relation of his little work to the vast field of animal morphology. Great stress also was laid on the employment of a precise biological terminology, for it is an unfortunate fact that a desirable nomenclature has not yet found its way into human anatomy. From the papers which were returned at the final examinations, it appeared that these oral exercises had not been without their effect in supplementing the laboratory studies.

The course in elementary embryology was conducted upon the same essential plan as that in comparative anatomy. There were laboratory exercises and one recitation a week. In embryology, however, the course was shorter, as only two exercises of two hours each were devoted to the laboratory work in this branch.

The first class in embryology numbered about sixty-five students who were absolutely untrained in laboratory methods, since this course was given when laboratory work was first initiated in the college, and before the new laboratories were built. The first class was divided into two sections, each section meeting but once in two weeks. The second class in embryology numbered about one hundred students, all of whom were accommodated in the new laboratory at one exercise. The third class was the spring class of the present year, numbering about thirty-five students. The second class was somewhat familiar with laboratory technique, most of the students having done some work before coming to the embryology. The last class in embryology was composed of the students who had taken the full first year's laboratory course, including comparative anatomy, during the previous term.

The work of this class was particularly gratifying to me, for more work and better work was accomplished in a shorter time than with any other class, and the enthusiasm which pervaded the class, and the eagerness for more work, were more manifest than during any previous course. This demonstrated most forcibly the effects of systematic laboratory training in elementary comparative anatomy and histology, in providing the student with an independent mastery of laboratory technique, and in developing in him a love of an advanced practical study.

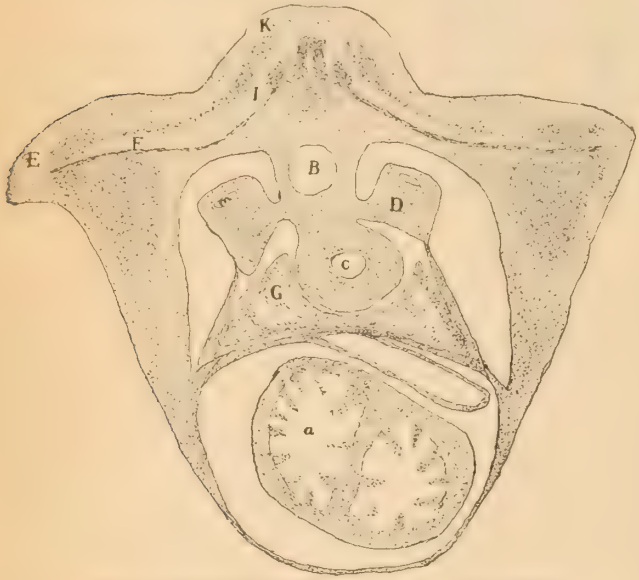

Fig. 14.—Five days' chick, through heart. Louis Dysart.

Our work in embryology was essentially limited to a study of the chick's development during the first five days of incubation. During the last course some work was done in mammalian embryology. Essentially, the exercise consisted of the practical studies as laid down in the appendix of Foster and Balfour's *Elements of Embryology.* The students were not, however, provided with this text-book, but were guided in their laboratory exercises by some written syllabi; and for a didactic study they employed any of their anatomical or physiological text-books in conjunction with the oral instruction. During the last year three most excellent text-books on embryology have been made available in our language; and I have recommended one of these three works—by Marshall, Minot, or Hertwig—to my last class as a text-book to supplement the laboratory instruction.

The student prosecuted all of the technical work in embryology. Each student studied the whole living embryo in the egg during the various typical stages of development advised by Foster and Balfour, then removed the embryo and studied it as a transparent object, and finally killed and fixed it and preserved it for future microscopical study. When the series of whole embryos had been studied, the tissue obtained by each student was stained, imbedded, cut in serial sections, and mounted. Every student in the class obtained a thorough drill in the technique of avian embryology, and made many permanent preparations for his future study. For the regular course, however, it was found advisable not to depend upon the sections cut by the students for systematic study, because many accidents in preparation occurred which would have defeated any plans in this direction. For the systematic study of sections, therefore, the class was provided with a set of uniform sections prepared by the demonstrator.

I have found it advisable, in some minor details, to depart from the order of the practical work laid down in Foster and Balfour. For instance, it was found after the first trial that the thirty-six-hours' chick was too difficult an object for introductory study by students unfamiliar with embryological technique; and, as a consequence, the lessons on the thirty-six-hours' and forty-eight-hours' chicks were unprofitable. I have found, moreover, that much of the success of a laboratory course of instruction depends upon arousing the enthusiasm and interest of the class early in the study, and that three or four unprofitable and difficult lessons at the outset will do much to dampen the ardor of the most earnest student. To make the work interesting early in the course, and to provide the student with an object which he could readily study, I have, during the last two courses, introduced at the second lesson the embryo of the *fourth day* of incubation. The first lesson was devoted to the study of the unincubated hen's egg, in order that the student might become familiar with the parts of the egg as an introduction to further study, and also that this object might serve as a lesson on an animal ovum, directing the student's thought in the direction of a comparative study of animal ova. The four-days' whole embryo, introduced at the second lesson, proved a most attractive object to the student. The blastoderm was of a sufficient size to permit of careful study by the unaided eye, and the embryo, with its beating heart and well-defined outline, was a very impressive object. The observations upon this embryo readily paved the way for the study of the younger chick embryos compared with this four-days' chick as a type, and the three-days', two-days', thirty-six-hours' and twenty-four-hours' embryos were introduced, one at each succeeding lesson. One lesson was

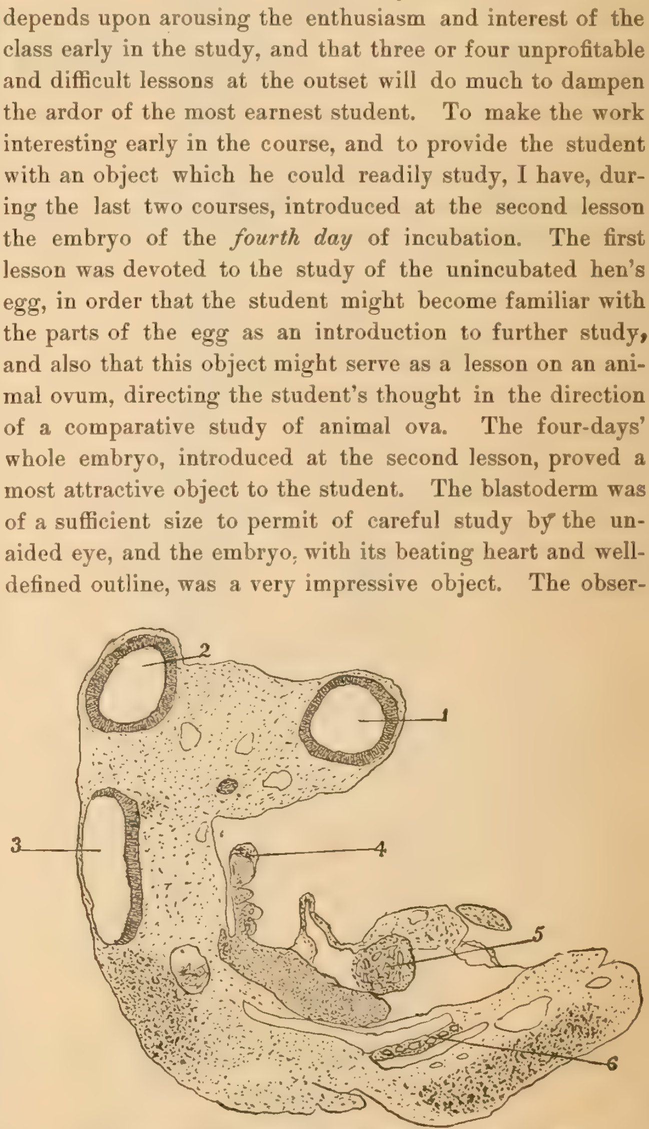

Fig. 15. -Longitudinal section, four days' chick. W. D. Leach.
1. Forebrain. 2. Midbrain. 3 Hindbrain. 4. Visceral arch. 5. Heart. 6. Kidney.

devoted to a study of the development of the blood and blood vascular system. Following these lessons, several hours were devoted to practical work in cutting and mounting the embryos previously hardened by the members of the class. The study of sections succeeded the technical work, and in this study the order employed with the whole objects was reversed; that is, the younger embryos were studied first. A section behind the heart of a thirty-six-hours' chick introduced the work on sections, and this lesson acquainted the student with the embryonic layers, the neural canal, notochord, aortæ, Wolffian ducts, cleavage of the mesoblast, etc.—that is, with the fundamental structures of the embryo. Sections through the heart and head of the thirty-six-hours' chick were now introduced, and these followed by various typical sections of the two-days', three-days', four-days', and five-days' chick embryos.

The drawings were made by the members of the class in embryology in essentially the same manner as in comparative anatomy—that is, class-room sketches were reproduced in India ink. The drawings which have been submitted for your inspection represent a fair average of the work of the last two classes.

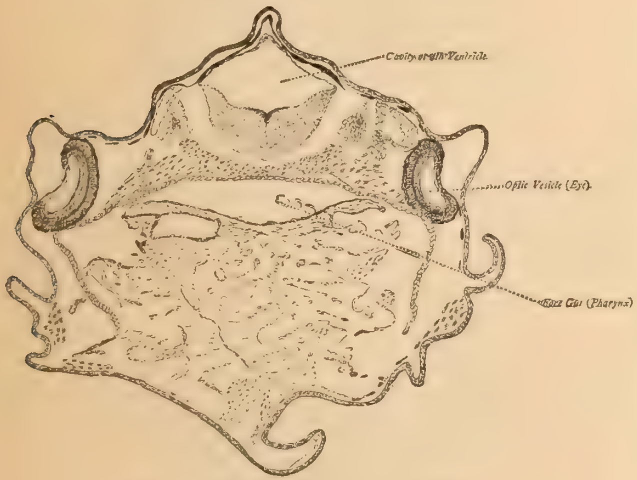

Fig. 16.—Head of tadpole. D. R. Stockley.

My experience in the two years of teaching these courses in a medical school has convinced me of the value of this kind of training in the medical curriculum. In fact, it seems to me an indispensable preparation for the more applied branches of medical science; and, as an introduction to the higher laboratory courses of the medical school, I can conceive of no more profitable work than this elementary training in biology. It is often argued that the student should have obtained his training in comparative anatomy and embryology before entering the medical school. This is certainly true; but how many of the students who apply to-day for admission to our American medical colleges have had a biological laboratory training? We are always ready and willing to condition those students who have prosecuted biological studies at any of our science schools.

As to the direct benefits to the student of such a laboratory course as I have outlined, I may mention a few which have come under my notice during the experience with the classes in the laboratory. The training in the laboratory methods, and the instillation of that independence so essential in practical scientific study, I regard as the first result of this work. The delicate manipulations and patient endeavors required in many of the minute dissections in comparative anatomy are an invaluable discipline to the medical student. The handling of fresh tissue and the often unconscious acquaintance with many simple physiological processes are peculiar to this work on the lower animals. The methods of recording observations, both in writing and in drawing, are early acquired by the student. Scarcely second in importance to the purely technical training comes the training in biological terminology acquired by the students in these branches. It was very gratifying to find, in the various examinations, the ease with which the students had acquired and employed the precise terms of the new biology. Any one who has inspected the anatomical examination papers of the ordinary medical student must have been struck by the student's poverty in this direction.

The verdicts of my colleagues who are engaged in teaching such subjects as histology, pathology, surgical pathology, and bacteriology in the laboratory, are very much in favor of those students who have completed the course in comparative anatomy and embryology. These students enter the advanced laboratory studies with a foundation in the method of scientific work amply sufficient to take from their teachers the time-consuming task of preliminary training in technique; they enter the laboratory with the eager enthusiasm of the true scientific spirit, and their work is accordingly satisfactory. During our last spring course the class in bacteriology, under the instruction of Dr. Gehrman, was composed of the same members as my class in embryology—that is, of students who had taken a year's laboratory work in histology and comparative anatomy. I am informed that the work of this class in bacteriology was of the highest order, and that, while the course of study was shorter than usual, the ground covered by these students was more extensive and the results more satisfactory than with any previous class. Is it too much to believe that these same students will do equally meritorious work in medicine and surgery?

I must take this opportunity of thanking those members of the various classes who have worked so conscientiously and patiently with me, and to express my gratitude to my able assistants who have taken many burdens from the work. Especially do I feel indebted to my friend and colleague Professor Bayard Holmes, whose energy and perseverance have inaugurated this new work in medical education in the face of many obstacles, and whose constant encouragement has helped me through many difficulties.

The Paris Faculty of Medicine.—We learn from the *British Medical Journal* that Dr. Landouzy has been appointed professor of internal medicine and therapeutics, in place of Professor Hayem.

THE MILIARIA GROUP.[*]

By S. POLLITZER, A.M., M.D.

Besnier and Doyon,[†] in a note to their translation of Kaposi's *Treatise*, remark that our knowledge of the sweat glands as compared, for instance, with that of the sebaceous glands is very deficient. It is not difficult to account for this fact when we consider the obstacles which the location of the chief portion of the gland, deep in the cutis, creates; that the great number and close relations of the glands make it impossible to observe clinically the beginning of a disorder in a single gland; and, finally, that the early involvement of the neighboring cutis in most cases entirely obscures the relation of the sweat gland to the pathological process. There is no reason, however, to believe that the sweat glands are favored with any special immunity from the disorders to which all glandular structures are subject. It is nearly thirty years since Hebra[‡] wrote that up to that time no diseases of the sweat glands involving structural changes had been described, and since that time not much has been added to our knowledge. The host of young dermatologists, however, in the great medical centers who are subjecting all the diseases of the skin, the common not less than the rare, to a rigorous microscopical study and the improved methods of examination, augur well for our progress in this special department not less than in the whole field of dermatology.

To review for a moment the organic diseases of the sweat glands which have already been described: It was my good fortune to be the first to establish as a disease of the sweat glands,[#] on the sure footing of pathological anatomy, a disorder which the keen eye of the great French clinician Verneuil had led him to locate in the sweat glands and which he called, on purely clinical grounds, "*hidrosadénite phlegmoneuse*," and the papers of Dubreuilh have corroborated my results. At the present time there exists some confusion as to the pathological relations of adenoma of the sweat glands. Darier and Jacquet's "*hydradénomes éruptifs*" and "*adénomes sudoripares*," Török's "syringo-cystadenoma," Perry's "adenoma of the sweat glands," Quinquand's "*cellulome epithélial éruptif kystique*," etc., describe conditions which have been referred to the sweat glands, but many of them, we know now, are independent of these structures; in fact, with the exception of two or three cases in which a true adenomatous proliferation was found disguised under other clinical conditions,[||] no undoubted case of this form of tumor has been described. These benign epithelial growths of the skin are being now vigorously studied, and we may soon hope for fuller light on the subject. It appears certain that malignant (cancerous) growths may originate in the sweat glands; and when we have added atrophy, hypertrophy, and fatty degeneration of these structures we have almost exhausted the brief register of the organic diseases of the sweat glands. There remains only the group which forms the subject of this paper.

I propose to group together three disorders of the sweat-gland apparatus which depend on an obstruction to the flow of sweat through the duct. The term miliaria is now used to designate an eruption of minute vesicles or papules with clear or cloudy contents, associated with excessive sweating; and the various terms sudamina, miliaria crystallina, miliaria rubra, miliaria alba, miliaria vesiculosa, miliaria papulosa, and lichen tropicus have been applied to two distinct disorders, sometimes indiscriminately.

Miliaria crystallina or *sudamina* consists of an eruption of perfectly clear transparent vesicles, from a pin's head to a split pea in size, that develop anywhere on the body in the course of some general febrile disease (articular rheumatism, puerperal fever, typhoid, etc.). They have been aptly described as resembling drops of dew scattered over the surface. They are accompanied by no subjective symptoms whatever, are of brief duration, and their disappearance is followed by but slight desquamation. The eruption is entirely without diagnostic or prognostic value on the disease with which it is associated.

The anatomy of the vesicle has been studied by Haight, Robinson, and Török. They agree that the vesicle is located wholly in the horny layer of the epidermis and that a sweat-gland duct may generally be demonstrated leading into it. The vesicle depends on an obstruction to the outflow of sweat, which, unable to escape, distends the tissues below the point of obstruction. This obstruction must be located in the uppermost layers of the stratum cornuum, if not in the very surface of the integument. Haight's theory of the cause of the development of this vesicle was that in a sudden outflow of sweat the current forced one turn of the spiral duct against another, forming a valvular occlusion. This view, it seems to me, is not tenable; such an occlusion would naturally take place at the first spiral turn in the course of the sweat current, and not at the last. The vesicle would therefore be located at the bottom of the rete and not at the top of the horny layer. A more reasonable explanation, it appears to me, is that in the neglect to which the skin is necessarily subjected during the anhidrotic stage of the fever in connection with which the rash occurs, the orifices of the sweat ducts become blocked up by epidermic *débris*, and nutrition changes in the epidermis, due to the fever, may aid in producing this effect. The fluid, when the perspiration is restored in the "critical sweat," can not pass the obstruction in the surface and distends the tissues just below the point of occlusion.

In *miliaria rubra*—called also *lichen tropicus*, *miliaria vesiculosa*, *miliaria papulosa*, *miliaria alba*, *eczema sudamen*, and *prickly heat*—the seat of the lesion is somewhat deeper. The affection is too well known to require more than a few words as to its clinical appearance. It consists of minute vesicles or papules on a slightly reddened skin which itches and prickles intensely. The contents of the older vesicles are sometimes cloudy or opaque and they have a whitish appearance; hence the term miliaria alba. Aside from the evidence afforded by the histological examination, the clinical appearances and the course of the disease alone negative the view of the Vienna school that miliaria rubra is an eczema. No eczema will remain for weeks in the erythematous-vesicular stage without weeping, and no eczema will disappear as does prickly heat, sometimes within twenty-four hours, leaving hardly a trace. I have before me many gentlemen who come from tropical countries and who have large experience with prickly heat; it can not be necessary to dwell on the manifest differences between an eczema and this disease.

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[*] Read before the Dermatological Section of the First Pan-American Medical Congress.

[†] I, p. 185.

[‡] Sydenham ed., 1866, vol. i, p. 71.

[#] *Jour. of Cut. and Gen.-urin. Dis.*, 1892.

[||] Elliot. *Jour. of Cut. and Gen.-urin. Dis.*, May, 1893.

The anatomy of miliaria rubra has been studied by Robinson, Török, and myself. Robinson regards the affection as an eczema; Török looks upon it as due to sweating, but the vesicles are not, according to him, associated with the sweat ducts. My own observations, published in the *Journal of Cutaneous and Genito-urinary Diseases*, February, 1893, were based on the histological study of eight cases in different stages and from patients ranging in age from the infant to the adult. I reported in that paper that I had found the vesicles to be always connected with the sweat ducts, but subsequent studies on other cases lead me to modify this statement somewhat. I agree with Török that the vesicles are sometimes the result of inflammatory colliquative changes in the epidermis, but believe this form of vesicle to be the exception, and to occur only in cases attended with a great deal of irritation. The characteristic vesicles are always found in or below the stratum granulosum, but the entire sweat canal in the epidermis is often distended with fluid below this point, forming a funnel-shaped spiral canal. Serial sections are necessary in many cases to enable the observer to determine with certainty the relation of the sweat gland to the vesicle. The contents of the vesicles—which it would be correct, in some respects, to call cysts—are at first perfectly clear (Fig. 2); later they become filled with cellular elements (Fig. 3), and the spaces are sometimes occupied by a compact mass of granular elements and epithelial detritus (Fig. 4). It is in this stage that they clinically resemble papules, though a minute vesicle deep in the epidermis will also give the appearance of a papule. Otherwise the only histological appearance to account for the clinical picture of the minute papules which have given the name of miliaria papulosa or lichen tropicus to the affection consists in a minute circumscribed thickening of the horny layer at the orifice of the sweat duct, as is shown in Fig. 1. There is in the cutis only a slight amount of circumvascular infiltration, but here and there the emigration of white blood-corpuscles in the papillary layer is very considerable, and it is above such patches that vesicles of colliquative origin sometimes appear. This evidence of inflammation is only natural when we consider the great strain on the papillary blood-vessels and the vasomotor nerves due to the heat and the added effect of the irritation from the blocked-up sweat ducts.

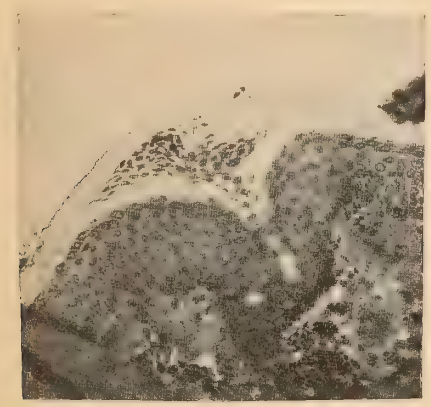

FIG. 1.

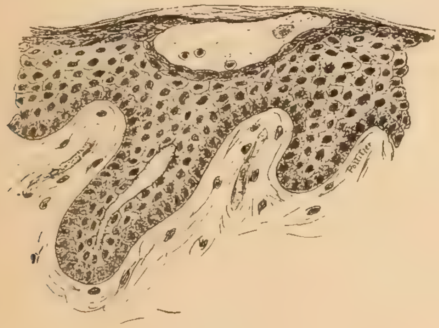

FIG. 2.

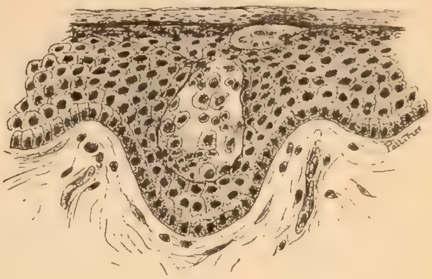

FIG. 3.

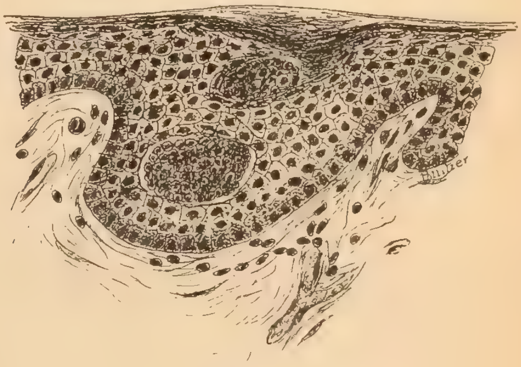

FIG. 4.

We have no positive data for an explanation of the blocking up of the ducts while sweating is so active as in those who acquire prickly heat. In my publication* on this disease I have advanced a theory to account for this phenomenon. The horny layer, bathed constantly in sweat, becomes saturated with watery fluid, and the cells, swelling by imbibition, occupy more space vertically and laterally, and thus spread over the orifices of the sweat ducts, occluding them at a moment when the flow of sweat is temporarily in abeyance. The next flow of sweat meets the obstruction in the horny layer, and, unable to escape, distends the epidermis first of all just below the point of obstruction—that is, below the lowest layers of the horny layer—and later, as the amount of secreted fluid increases, the distention involves the entire canal in the epidermis. That such a swelling of the cells of the horny layer actually occurs, I have demonstrated in the paper referred to. The saturation with fluid may be so great and so constant that the horny layer in the neighborhood of the sweat pore assumes something of the appearance of that of a mucous membrane; its nuclei are well preserved, and take nuclear stains readily. (See Fig. 1.) We must still, however, account for the fact that although all persons sweat in hot weather, not everybody acquires prickly heat, or, to express it in the terms of my theory of the pathology of the disease, not every horny layer imbibes the water of the perspiration and swells. To explain this difference in the behavior of different horny layers under apparently similar conditions, I have taken into account a factor which we know differs in different individuals and in different parts of the skin in the same individual—that is, the different degrees to which the skin is normally supplied with fat. Horny cells impregnated with fat can not absorb water, and therefore will not swell up and occlude the sweat ducts. Natives of tropical countries have, we know, particularly well-oiled skins, and are for this reason but little subject to prickly heat, while the inhabitant of a temperate climate resident in the tropics, who perhaps, like the Englishman in India, takes his daily bath or two, suffers intensely from this affection. No portion of the integument sweats more abundantly than the face, where prickly heat practically never occurs; the face is better supplied with fat than any other region. There is a therapeutic hint in this theory which I should like to suggest to some of my *confrères* from the South. It is to prevent the imbibition of water on the part of the horny layer before the disease develops in those who are subject to it, by providing an abundant supply of fat by means of inunctions with some fatty body. Of course, after the disease has once developed, soothing applications, especially powders, are indicated.

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* *Loc. cit.*

Miliaria profunda is a disease which was first described by Robinson* in 1884, and which until very recently remained without a name. It is true that Jackson,* in 1886, described the disease under the name of "dysidrosis of the face," from a fancied resemblance to the disease of that name, affecting the hands, described by Tilbury Fox and Hutchinson; but aside from the fact that the existence of Fox's dysidrosis as a disease of the sweat apparatus is still *sub judice*, the resemblance between our disease and Fox's is so remote that Jackson's name was generally received with great reserve. A case of the disease has been described by Rosenberg, of Berlin, and Hallopeau, of Paris. I have seen several cases, and Robinson, in a recent paper, says that he has seen perhaps forty cases in the last eight or nine years. The rash consists of nodules of a translucent boiled sago-grain appearance, from a pin's head to a pea in size, located in the face, especially around the nose, on the cheeks and forehead. It is most common in middle-aged women, though I have seen it in children and adolescents. The nodules undergo no change after they have once formed so long as the weather remains warm, but on the approach of winter they slowly disappear, to recur again the following summer. If they are incised, a drop of perfectly clear watery fluid escapes. They occasion no subjective symptoms whatever.

The anatomy of the disease has been studied by Robinson and by myself. The conditions are very simple. There are no changes—except, perhaps, those due to pressure—in the epidermis. The corium is occupied by a cyst of clear contents whose walls consist of a double layer of epithelial cells on a basement membrane (Fig. 5). The coil glands show no changes except sometimes an increase in the width of their lumen. The condition is clearly one of cystic dilatation of the sweat duct, the dilatation occupying the corium, and the obstruction on which it depends must therefore lie below the epidermis. Given such an obstruction, the secreted sweat must distend the canal through which it can not escape. With the approach of cold weather and the cessation of sweating, the sweat in the cyst is absorbed and the lesion apparently disappears; on the re-establishment of the sweating the following summer the affected duct is again distended by the secreted fluid. Since the obstruction lies in the corium, it is not desquamated with the epidermis, and the condition is therefore permanent.

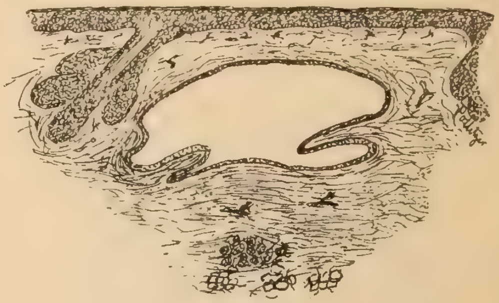
Fig. 5.

When this paper was planned the disease had received no name except that of dysidrosis—a term to which there were manifest objections. In the last number of the *Journal of Cutaneous and Genito-urinary Diseases* (August, 1893) Dr. Robinson has a paper on this disease to which he now gives the name hidrocystoma. The name is certainly appropriate in that it conveys a fair idea of the pathological condition. I see, however, no reason to modify my suggestion as to the name miliaria profunda. The aim of this paper is to emphasize the fact that there is a group of diseases of the sweat glands which have as a common feature the occlusion of the duct of the gland without injury to the secreting coil. There results, therefore, in all a kind of retention cyst. In the first, or superficial miliaria (miliaria crystallina), the obstruction is in the uppermost layer of the stratum corneum; in the second variety (miliaria media, or rubra) the obstruction is in the lower horny layer just above the level of the stratum granulosum; in the third, miliaria profunda (hidrocystoma, Robinson), the obstruction is entirely below the epidermis. To two of these conditions the name miliaria has already been given and is sanctioned by long usage. It seemed but natural, therefore, to apply this name to the third disease and thus to include under a common name diseases which are pathologically and ætiologically so closely related. There is, of course, a well-grounded objection to the multiplication of names in dermatology; but when its purpose and tendency is the simplification of our knowledge of a group of diseases, it seems to me not only justifiable but a distinct advantage. On this point I should be glad to hear the views of the section.

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* *Journal of Cutaneous and Genito-urinary Diseases.*

32 East Sixtieth Street.

TWO CASES OF
PROGRESSIVE MUSCULAR ATROPHY.
A REPORT OF THE PATHOLOGICAL EXAMINATION, WITH SPECIAL REFERENCE TO THE FUNCTIONS OF CERTAIN CELL GROUPS IN THE SPINAL CORD.*

By GRÆME M. HAMMOND, M. D.

Cases of progressive muscular atrophy, particularly when accompanied by pathological investigation, are of sufficient rarity to warrant their presentation. One of my cases is a typical example of the Aran-Duchenne type of the disease, beginning in the muscles of the hand and progressing in the usual manner. The other is a case of the peroneal type—that is to say, progressive muscular atrophy beginning in the peroneal muscles—and must not be confounded with the so-called "peroneal type" of Marie and Tooth. The history of the latter case, up to the time the patient came under my observation, is furnished by Dr. Charles E. Lockwood.†

"Mrs. A., white, aged forty-six years, born in Ireland. Family history: Father died of old age; mother died of cancer of the breast, aged sixty-six years; three sisters and one brother living and well; one sister died of consumption, aged twenty-two years.

"*Personal History.*—Never seriously ill; has suffered some what at times from malaria. In the spring of 1889 she had a sharp, burning, shooting pain in the right foot, but did not consult a physician in regard to it. She spent the summer of 1889 in Saratoga, and thinks the place where she lived was damp. No history of gout, rheumatism, or syphilis. On September 1, 1889, she stumbled over a chair, bruising her right shin slightly, and a few days afterward noticed that she was unable to walk as well as formerly. The trouble persisting, she consulted me February 6, 1890, complaining of a peculiar heaviness and weakness of the right leg and foot in walking, and of a diminution of temperature in these parts. On examination, I discovered marked weakness of the flexors of the foot and the extensors of the toes. The right leg and foot felt colder to the touch than the left; atrophy of the anterior tibial muscles was not marked. There was no pain, no sensory, rectal, or bladder disturbance. Tendon reflex at the right knee was present. There was diminished electro-muscular excitability to the induced current, and the normal formula was practically unchanged so far as galvanism was concerned. Here, then, was a case characterized by a marked loss of power in the group of muscles supplied by the anterior tibial nerve, coming on insidiously and gradually, with no premonitory symptom except the shooting, burning pain in the right foot noticed during the preceding spring. No appreciable atrophy, no sensory, bladder, or rectal disturbance. Tendon reflex at the knee intact; reaction to the faradaic current diminished, and to galvanic unaltered. The temperature of the affected limb lower subjectively and objectively, and this condition connected in its apparent commencement with a local injury in the mind of the patient, who otherwise appeared to be in a good state of health. Was the affection central or peripheral? I was unable to decide, and asked Dr. Allan McLane Hamilton to see the case. He expressed the opinion that the trouble was not central, advised the application of the actual cautery over the peroneal nerve near the outer tendon of the biceps muscle, the hypodermic injection of the paralyzed muscles with one sixtieth of a grain of strychnine daily, massage, and the daily application of the faradaic current.

"On March 31, 1890, while going to church, the patient's right leg gave way and she fell, bruising her face severely. On April 1, 1890, my patient was seen by Dr. M. Allen Starr, who found paralysis of the anterior tibial group of muscles of the right leg, atrophy, and the reactions of degeneration, loss of faradaic action, and change in the galvanic reaction, with the knee-jerk still preserved."

When I first saw the patient there was complete paralysis of the muscles of the right leg from the knee downward. In the thigh the extensor muscles of the leg were almost completely paralyzed. She could contract the quadriceps extensor, but not sufficiently to move the leg. There was a stronger contraction of the flexors. All of the muscles of the leg and thigh were atrophied. This condition was particularly apparent in the vastus internus. In the left leg the condition of the muscles was not quite so bad. She could voluntarily flex and extend the toes, but to a very limited extent. Faint motion could also be seen when attempts were made to flex and extend the foot. The muscles of the thigh were capable of exerting a moderate degree of force. Her left leg was strong enough to enable her to take a few steps about the room with the aid of a pair of crutches. The muscles of the left leg were also atrophied, but less so than those of the right leg.

The knee-jerk was almost imperceptible in the right leg, but was readily obtained in the left leg, although the action of the muscles was extremely sluggish. Sensation was normal in every particular. Tickling the soles of the feet induced an immediate jerk in the left leg and an attempt of the thigh muscles to jerk the right leg. The abdominal reflex was also present. Fibrillary twitchings were frequently seen in the muscles of both limbs.

The right hand and forearm were also involved. The muscles of the thenar and hypothenar eminences were weak and atrophied, and the flexors of the hand were beginning to show signs of weakness. Fibrillary twitchings could also be seen in the muscles below the elbow. The left hand and arm were not affected at all.

None of the muscles of either leg would respond to faradism, but all of them reacted to the galvanic current. Those that were paralyzed and atrophied the most responded the least, but none of the muscles entirely failed to show vitality. Some of the muscles, particularly those of the left leg, reacted better to the C. C. C., while in others the C. C. C. seemed to equal the A. C. C. The muscles of the hand would still respond to strong currents of faradism, and reacted normally to galvanism qualitatively, but were diminished to it quantitatively.

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* Read before the American Neurological Association, July, 1893.

† Medical Society of the State of New York, Eighty-sixth Annual Meeting.

The atrophy of the muscles progressed steadily, and gradually electrical contractility was lost, until at the time of her death the only reactions that could be obtained in the lower limbs were in the extensors of the left leg.

The atrophy in the right arm extended and finally involved the deltoid, biceps, sterno-cleido-mastoid, and trapezius, but these muscles were never completely paralyzed and were but moderately atrophied. The atrophy in the muscles of both hands became extensive, and a short time before her death the strongest galvanic current the patient could bear failed to elicit any muscular response. The flexors and extensors of the right hand were also atrophied and failed to respond to electrical excitation. In the left forearm fairly strong galvanic currents caused moderate but distinct contractions of both flexors and extensors. I wish to call particular attention to this complete paralysis of both hands and one forearm with retention of muscular movements in the other forearm, and will refer to it again in speaking of the preservation of certain cells in the cervical cord and the disappearance of others. The muscles of the back were paralyzed and atrophied so that she could not sit erect.

During the last month of her illness the abdominal muscles, particularly on the right side, became weak and were probably atrophied. The patient observed that she could not make an expulsive abdominal effort at stool, and when she attempted to sit up from a recumbent posture the hands placed upon the abdominal muscles would fail to feel the muscles on the right side of the abdomen contract, while those on the left side contracted fairly well. The intercostal muscles on the right side were also affected. About a week before she died she began to complain of shortness of breath and attacks of cardiac palpitation. There was also feebleness of voice and difficulty in swallowing. At the end of the week she suddenly had an attack of either cardiac or respiratory paralysis. She rallied from this after prompt and energetic treatment. Two hours later she had another and similar attack, from which she died. I performed the autopsy about ten hours after death. I removed the cord and brain and such pieces of nerves as I could obtain near the cord. The family of the patient objected to the proceedings and stopped me before I could get any of the muscular tissue and large nerves.

The specimens were hardened in Müller's fluid and stained after Weigert's method. The posterior white columns of the cord were normal from their origin to their termination in the nuclei gracilis and cuneati, and beyond this point nothing abnormal could be discovered in the sensory area of the medulla or pons. The posterior horns of gray matter were also normal, and Clark's columns were well developed, the cells standing out sharply in direct contrast to those observed in the anterior horns. The direct cerebellar tract seems in the majority of sections to be well preserved. In other sections there seems to be more connective tissue than there should be, but the nerve tubes are distinct and their axis cylinders stain plainly. Gowers's column is degenerated throughout its entire extent. There is a great increase of connective tissue, many of the nerve tubes have disappeared, and numbers of those fibers which remain appear degenerated. The direct and crossed pyramidal tracts show greater degenerative changes than any of the other white columns. Normal, healthy fibers in these regions are comparatively scarce. The whole of these areas seems to be occupied by a dense mass of connective tissue through which disorganized nerve tubes are sparsely scattered. Comparing these regions with the normal posterior columns, a most perfect contrast is seen. (See illustrations.) It is in these pyramidal tracts and in the anterior horns of gray matter that the most striking changes are seen. The sclerosis of the pyramidal tracts can be traced upward in successive sections, and is intense at all levels until the upper cervical region is reached. Here the sclerosis begins to fade, and by the time the motor decussation is reached has disappeared completely. The pyramids throughout the medulla and pons appear normal.

In the anterior horns most of the nerve cells have disappeared and those that remain are greatly degenerated. I do not believe, in a careful examination of a great many sections, that I have observed one perfectly normal cell. Those that remain are rounded, have lost their processes, their nuclei are indistinct, and the body of the cell is granular. There is a distinct degeneration of the anterior-root fibers passing from the anterior horn through the anterior and lateral columns. Occasionally a fiber may be seen which presents a fairly normal condition, but frequently whole fasciculi appear to be replaced by fibrous tissue. The fibers in the anterior commissure seemed, with those in the posterior commissure, to be in a very fair state of preservation, and many of the former can be traced for quite a distance into one anterior horn, presumably the left one, while on the other side they end with the commissure. The interstitial tissue of the cornua is changed. The nerve fibrillæ are entirely gone from one horn and greatly diminished in the other. There is an increase in connective tissue and connective-tissue cells. The blood-vessels are dilated and their walls considerably thickened. The cornua have changed somewhat in shape, the change being more marked upon one side than upon the other. In the lumbar and sacral regions both anterior horns are less voluminous than they should be, but both are very much alike. In the dorsal region one anterior horn is shorter than the other, and the lateral horn on that side is less prominent than the one on the opposite side. In the lower cervical region a marked difference in the horns is observed. On one side the medial, ventral, and lateral projections are fairly well marked, while on the other side the two former divisions have disappeared. Still higher in the cervical region the anterior horns are more symmetrical, while at a higher level still both horns are alike. In the sacral cord no cells were found at all. In the lumbar cord (at the level of the second and third nerves) a few cells are observed on the lateral side of the horn on one side; no cells are found on the other

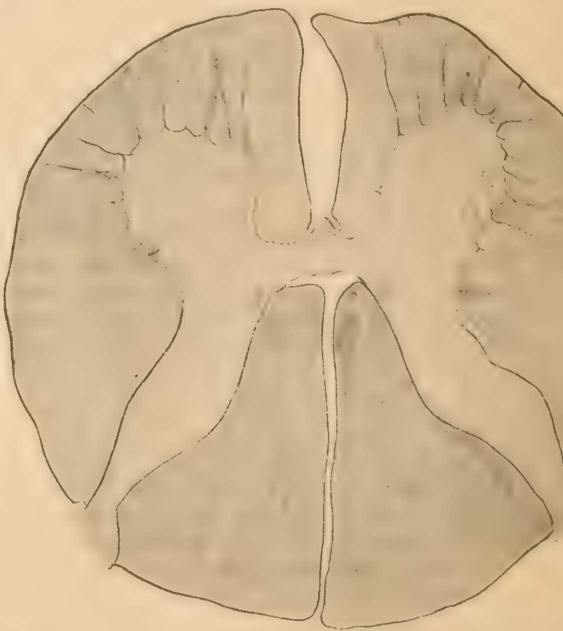

FIG. 1.—Case I. Lumbar cord, third segment, showing the position of the cells which probably supplied the quadriceps extensor cruris group. The posterior columns and the white substance in contact with the anterior horns are normal (dark shading). All else is degenerated.

side (Fig. 1). In the dorsal region the cells are more numerous, but one side still shows a marked numerical advantage over the other. In the anterior and lateral horns a few cells can be seen, while upon the opposite side they are only occasionally met with (Fig. 2). In the lowest cervical regions the inner or medial group is absent, a few cells of the anterior group are present on one side and absent on the other, and there are a few cells of the lateral group on both sides (Fig. 3). Higher in the cervical region a few cells of the anterior group appear in the horn which did not have any at a lower level.

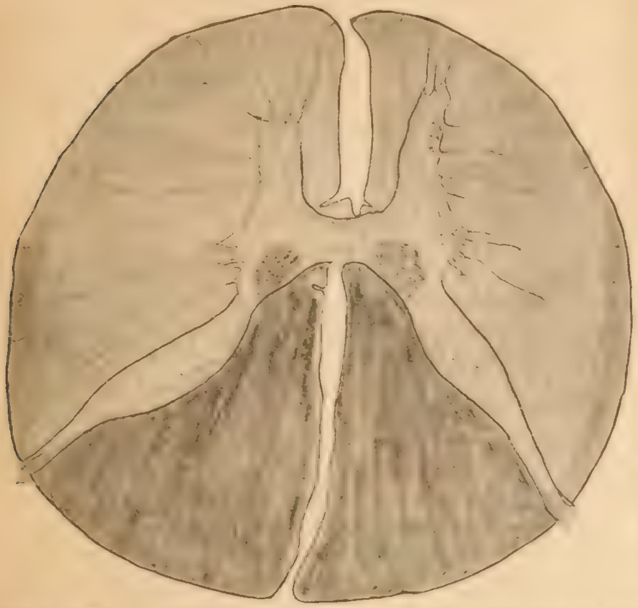

FIG. 2.—Case II. Dorsal region, tenth segment, showing position of the cells which probably supplied the abdominal muscles. Dark shading indicates normal tissue.

Tracing the horns upward to the point where they are cut off by the motor decussation, we find that the cells increase numerically, but still show very evident signs of degeneration. Following the cells still higher into the medulla, it was observed that the cells forming the nucleus ambiguus as high up as the ninth, tenth, and eleventh nerves were rounded, granular, had lost their processes, and their nuclei in many instances were invisible—a similar change to that observed lower down in the cord, only not so well marked. Higher up, where the nucleus ambiguus gives off fibers to the facial nerve, the cells presented a perfectly normal appearance.

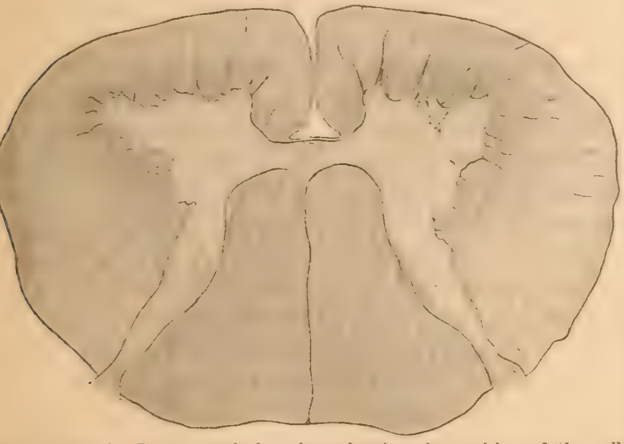

FIG. 3.—Case I. Lower cervical region, showing the position of the cells which probably supplied muscles in the forearm. Dark shading indicates normal tissue.

There is nothing in the clinical history of this case which separates it from the typical form of progressive muscular atrophy, except that it began in the leg. There is nothing in the pathological findings which distinguishes this case from others.

The disease which is commonly known as the "peroneal type" of progressive muscular atrophy, and which was described almost simultaneously by Marie and Tooth, is an essentially different affection from the one under consideration. That described by Marie and Tooth occurs in young subjects, usually with a family history of a similar disease, and in which there are marked disorders of sensibility. The pathology of this disease is not clearly understood, but it is undoubtedly very different from that of progressive muscular atrophy.

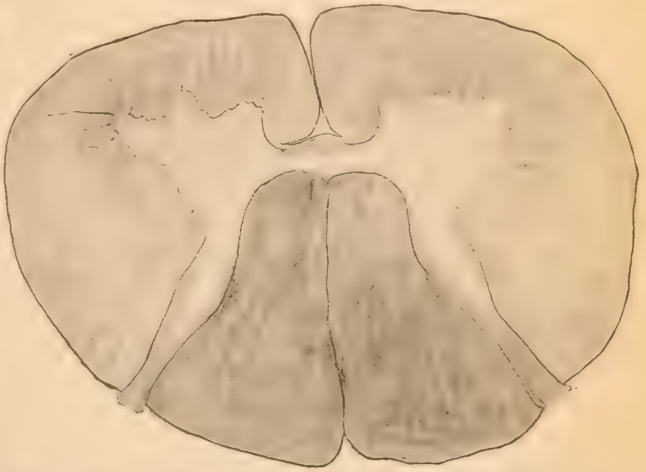

FIG. 4.—Case II. Lower cervical region, showing similarity of appearance to Fig. 3, Case I. Absence of all cells. Dark shading indicates normal tissue.

Gowers * does not consider such cases to be of spinal origin at all. He considers a peripheral neuritis, motor or total, of extremely chronic course and peculiar origin, must be recognized as the only possible lesion. He quotes a case by Friedreich and another by Gombert to support his opinion. This theory of the pathology was also advocated by Tooth and accepted by Marie. There is therefore no foundation for terming this affection progressive muscular atrophy.

The case under consideration is very different. The changes in the spinal cord are identical with those previously described by other observers and resemble the alterations in the cord in the case about to be reported as closely as one specimen can resemble another. (Compare Figs. 3 and 4.) It can therefore be regarded as a true type of progressive muscular atrophy, while the so-called "peroneal type" of Marie and Tooth has no established right to the title at all, and its employment in such cases is decidedly misleading and confusing.

In regard to the groups of cells observed in certain regions of the cord a word must be said. The relation of cell groups in the anterior horns to individual muscles and groups of muscles has not been by any means definitely determined. It is only by collecting and studying the evidence presented by a great number of cases that anything like scientific ac-

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* *Dis. Nerv. Syst.*, Part I, 1892.

curacy can be obtained. Every contribution which pertains to this end is therefore important. In this case certain muscles retained perceptible vitality up to the time of death, while the other muscles were totally paralyzed and greatly atrophied. Certain cells were observed in the cord in a partially degenerated condition, while all other cells had disappeared. The level of the cord at which these partially preserved cells were found corresponds to the level from which the muscles preserving vitality should receive their motor power. It is fair to suppose, therefore, that the cells which were observed were the ones which were in direct communication with the muscles which retained voluntary power. In the lower lumbar and sacral regions no cells were observed at all and the horns are both slightly shrunken but symmetrical. This indicates, of course, that in this region both sides of the cord were equally diseased, and in support of this view it was stated that the muscles of both legs below the knees were completely paralyzed and atrophied. But in the left thigh the patient could slightly move the quadriceps extensor, and this group of muscles responded to electricity to the last. In the upper part of the lumbar cord, at the level of the second and third segments, I find sections in which a few cells can be seen in one horn on its lateral aspect (Fig. 1). Probably it was these cells which supplied the quadriceps extensor. In the dorsal region, at the level of the tenth segment, cells were observed in the anterior and lateral horns on one side (Fig. 2). There was during life well-marked paralysis of the abdominal muscles on one side, with good preservation of the corresponding muscles on the other side. It is probable that these cells were in relation with the preserved abdominal muscles, as the muscles of the back were completely paralyzed, so far as could be ascertained.

In the lower cervical region, at the level of the seventh and eighth segments, the mesial group of cells had disappeared from both horns and the anterior group from one horn (Fig. 3). The muscles of both hands were paralyzed and the muscles of one forearm, both flexors and extensors. The muscles of the other forearm, both flexors and extensors, retained moderate power until death occurred. The conclusions to be drawn from this condition must be that the mesial group supplied the muscles of the hand while the anterior group supplied the muscles of the forearm. It seems probable that the cells supplying flexors and extensors of the same limb are not intermingled, but that one group is superimposed upon the other and are directly contiguous.

The second case was that of a woman, forty-four years of age, whom I first saw in the year 1882. At that time the disease was just beginning and only affected the muscles in the ball of the left thumb. I saw her from time to time until she died, and was therefore able to watch the progress of the disease almost from its incipiency to its termination. It ran the usual course and was in every way typical. Muscle after muscle wasted and became paralyzed. Fibrillary twitchings were well marked. The electrical reactions were normal qualitatively as long as they could be obtained. The contractions were feeble, however, and, gradually declining, finally ceased altogether in the affected muscles. At the time of her death all of the muscles receiving innervation above the second dorsal nerves, except the facial muscles, were atrophied. Paralysis was almost complete. She could not move either hand or either arm. The humeri had dropped from each glenoid cavity over an inch, and her head rolled about helplessly on her shoulders. She became maniacal and finally died in acute mania apparently from exhaustion. Her legs were not atrophied or paralyzed in the least, but they were slightly spastic. Her gait was perhaps a trifle stiff. The reflexes in the lower extremities were slightly exaggerated, but were abolished in the arms. Ankle clonus could not be obtained. There were no disorders of sensibility anywhere. I was only able to obtain the cord and a portion of the medulla.

It is not necessary to detail all the pathological changes found in this cord. Where such changes existed they were identical with those already described in the preceding case. In the cervical region there was the typical absence of cells in the anterior horn, slight alterations in the shape of the horn, and sclerosis of the motor tracts with preservation of the posterior horns and posterior white columns (Fig. 4). In the dorsal and lumbar regions the changes were slight, particularly in the latter, which appeared to be essentially normal.

I have placed sections of the cords of both of these cases under the microscopes so that the members of this association can compare one with the other and observe the conditions as I have stated them.

The microscopical picture which these sections present approaches very nearly the illustrations which Charcot has given us of "amyotrophic lateral sclerosis." In that disease we have a combination of the symptoms of progressive muscular atrophy together with those of sclerosis of the lateral pyramidal tracts. In these specimens there is undoubted sclerosis of both crossed and uncrossed pyramidal tracts, yet no symptoms of this condition were evinced during the life of the first patient and were only very slightly marked in the lower extremities of the second. This was probably the result of descending degeneration of the pyramidal columns. There were no symptoms of progressive muscular atrophy in the legs, and the arms never showed any evidence of spasticity.

Gowers states that he has never seen a case of progressive muscular atrophy without accompanying degeneration of the pyramidal tracts. Both of these cases presented that characteristic to a marked degree. The distinguishing feature of amyotrophic lateral sclerosis from progressive muscular atrophy is that symptoms of spasticity precede the atrophy and paralysis. In the latter stages of both diseases they are alike both clinically and from a pathological standpoint. The probability is that in progressive muscular atrophy the initial degeneration begins in the anterior horns of gray matter and the degeneration of the pyramidal tracts occurs subsequently. Spasticity then could not be induced because the motor cells, on the integrity of which spasticity depends, would be degenerated. In amyotrophic lateral sclerosis the degeneration evidently begins in the pyramidal tracts and subsequently extends to the anterior horns. In the late stages of the disease, when the cells in the anterior horns are degenerated, the symptoms of lateral sclerosis—such as clonus, exaggerated reflexes, and rigidity—decline and finally disappear. These two diseases are pathologically identical.

A singular feature in both of these cases was the fact that Gowers's ascending antero-lateral tract was degenerated and yet there were no disorders of sensibility.

Progressive muscular atrophy is a distinct affection depending upon certain and invariable lesions. It therefore seems absurd to classify the disease in "types" as it is now done. There are now four or five different "types" described which derive their titles either from the location of the first signs of atrophy, or from the age of the patient. An individual either has progressive muscular atrophy or he has not, and it should not be a matter of the least importance from a medical standpoint whether the disease begins in the hand or in the foot, or whether the patient is five years old or fifty. It would be neither more nor less absurd to speak of the "hand type" of locomotor ataxia because the disease happened to begin in the upper extremities.

THE
PREVENTION OF SCARLATINAL NEPHRITIS.*

By WILLIAM H. FLINT, M. D.

In view of the facts that nephritis is the most dreaded sequel of scarlet fever, that its prophylaxis has received comparatively slight attention at the hands of most authors, and that the practice of some contemporary physicians takes little cognizance of this aspect of the treatment of scarlatina, the writer has judged it opportune to present this subject before the Clinical Society, hoping that the narration of *his* experience in endeavoring to prevent renal disease, and the description by those members of the society who will kindly participate in the discussion of *their* prophylactic methods, may redound to our advantage and to the benefit of our patients.

The actual dearth of information in medical literature regarding this important matter will be evident to any one who critically reviews the works of the leading authorities to which the growing medical mind is wont to turn for counsel and guidance and which the writer has examined while preparing the present paper. This lack of accurate information, coupled with the fact that renal inflammation is still a frequent complication or sequel of scarlet fever, goes to show that a careful consideration of the preventive treatment of scarlatinal nephritis is even to-day in no sense a work of therapeutic supererogation.

It is true that most writers upon scarlatina say that the diet during the febrile period of the disease should be light and liquid, and that the patients should for about three weeks be zealously guarded against undue exposure to changes of temperature, in order that the cutaneous functions may be conserved; but beyond this their directions concerning prophylaxis are generally vague and indefinite. Now, while most of the cases of scarlatinal nephritis which the writer has seen *have* seemed to owe their development to exposures, which acted as exciting causes, he has met with other cases in which all possibility of undue exposure was eliminated, in which the bowels were active, and in which the kidney disease apparently owed its origin to the inherent exciting effects of the scarlatinal poison.

This cause of nephritis must underlie every case and must exert a predisposing influence to renal trouble, the strength of which is in direct proportion to the virulence and to the quantity of the scarlatinous poison acting upon the epithelium of the renal tufts and tubules, as well as upon the pharyngeal, gastric, and intestinal mucous membranes. Since the violence of this toxic action upon the renal tissues can not always be estimated by the severity of the constitutional or of the local symptoms of the fever, it is certainly a wise precaution to endeavor in each case to lighten the burden of the kidneys and to mitigate the poisonous effects of the scarlatinal *materies morbi.* That the former indication may be properly fulfilled by so sustaining and stimulating the functions of the skin as to render this organ's full emunctory powers available by so regulating the diet that comparatively few irritating excretory products shall pass through the renal epithelial cells, and by calling into action the eliminating power of the intestinal mucous membrane, is self-evident.

In proportion, however, as the perspiration is increased and the intestinal emunctory functions augmented, the urinary secretion is lessened, from which it follows that the most rational method of combating the ever-present predisposing cause of scarlatinal nephritis and of guarding, so far as possible, against its attacks, consists in augmenting the watery constituents of the urine *at the same time* that the cutaneous and intestinal secretions are held at their normal quantitative standard.

The neglect of this latter precaution has seemed to the writer *the* weak point of the contemporaneous treatment of scarlet fever. While appropriate measures looking toward the prevention of acute nephritis by dilution of the urine may be strictly enforced during the febrile period, they are too apt to be neglected so soon as the fever has subsided and the appetite has begun to crave solid fosds.

Yet this is the very time when the eliminating function of the kidneys should be kept most active and when the stimulating character of the urine should be reduced to a minimum, as is proved by the frequent inception of renal inflammation during the desquamative period of scarlatina. This view of the subject having forcibly presented itself to the writer's mind, he cast about for the easiest method of simultaneously fulfilling all the indications above stated.

The current methods of encouraging the normal action of the skin by sustaining an even and moderately elevated temperature in the patient's apartments and by daily lukewarm baths, followed by emollient inunctions, seemed perfectly adequate to the efficient accomplishment of their purpose.

The daily evacuation of the bowels by means of unirritating laxatives assured the maintenance of the important eliminative functions of the intestinal mucous membrane at a normal standard. The chief therapeutic problem which presented itself was therefore the selection of the best methods for fulfilling the third essential indication—viz., the dilution and the mitigation of the renal secretion.

A helpful suggestion, found in several books and pamphlets which came within the writer's reach, consisted in the recommendation that the milk diet be used, both during and after the febrile stage of scarlatina, with a view to the dilution of the urine and to the consequent prevention of nephritis.

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* Read before the New York Clinical Society, November 24, 1893.

Adopting this suggestion, the writer indeed found that the milk diet yielded excellent results, and that under this system the percentage of cases complicated or followed by nephritis at once fell to a very low figure. His experience at that time and subsequently has convinced him that faithful adherence to a strict milk diet, together with a careful observation of the other prophylactic precautions already mentioned, for a month after the cessation of the fever, prevents the development of nephritis in a large majority of the cases, and is, on the whole, the simplest and best prophylactic treatment of this disease. He soon, however, encountered an obstacle to the invariable employment of this treatment in the irreconcilable repugnance to milk manifested by some patients and by the inability on the part of others to adopt an exclusive milk diet, owing to the supervention of more or less distressing digestive disturbances.

Moreover, it was found that so soon as the patients began to move about their rooms and to engage even in such games and pastimes as were adapted to their enfeebled condition, their nutrition was sometimes hardly maintained at a normal point by milk alone, as was attested by a gradual diminution in their weight and by the persistence of their anæmia.

Some modification of this method being therefore frequently desirable, the writer instituted some experiments the object of which was to discover the best dietetic and diuretic treatment for the post febrile stages of scarlet fever compatible with the comfort of the patients and with the maintenance of their strength.

In reviewing the cases which he has treated since that time, the writer finds that they may be arranged in three categories—viz., (1) those in which an exclusive milk diet has been well tolerated for a full month; (2) those in which a mixed diet, consisting of milk and of solid foods, was employed; and (3) those in which milk was not tolerated in any quantities, and the diet was therefore necessarily composed chiefly of solid foods. In all these classes of cases the eliminating functions of the skin and of the bowels were kept active by the means already favorably mentioned.

To patients of the first class a strict milk diet was administered for a month after the cessation of the fever, from one to two quarts of milk being daily exhibited, according to the patient's age and appetite. At the end of that time the modified milk diet belonging to the second class was adopted for two weeks, after which the solid diet was allowed. Even in *these* cases a careful watch was kept on the urine for two weeks longer before the cases were entirely released from professional surveillance.

At the beginning of the fever peptonized milk was employed whenever the irritability of the stomach demanded it, and sweet milk was at times replaced by junket, whey, skimmed milk, buttermilk, or koumiss. In the event of the appearance of albuminuria after the adoption of the mixed diet or of solid foods, the milk was forthwith resumed and continued until two weeks after the disappearance of the albuminuria. After that time the mixed diet was used for two more weeks, and finally the solids were again allowed.

The second class of patients embraces those who could only comfortably bear a limited quantity of milk. These patients have generally received two solid meals and two or three milk meals daily, the former consisting of clear and not too salty soups, green vegetables, bread and butter, cream, eggs, fish, oysters, chicken, and later a little fresh beef or mutton, roasted, broiled, or boiled.

Strict injunctions were given that with each of these meals a liberal amount of beverage be allowed—such as hot water with a little milk, very weak tea, or slightly sweetened cocoa. The two solid meals were given at about 8 and 1 A. M., respectively, and the milk meals at about 5 and 9 P. M., and at 2 A. M. in cases requiring nocturnal alimentation.

The third class of patients—viz., those who were unable to tolerate milk in any form without suffering from digestive derangements or losing weight—received the solid foods already enumerated, particular stress being always laid upon a liberal allowance of warm drinks being taken at each meal. In addition to this, a mild diuretic or alkaline remedy was exhibited, with two thirds of a glassful of water after each meal and at bedtime for a month after the cessation of fever. In most instances it seemed advisable to vary the diuretic or alkaline salt employed from time to time, in order to prevent exciting repugnance or gastric irritation by the too protracted use of any one remedy. The writer has employed citrate, bitartrate, bicarbonate, and acetate of potassium, citrate and carbonate of lithium, and bicarbonate of sodium, in doses varying from five to fifteen grains, in accordance with the age of the patient and the quantity of urine secreted. Since the adoption of this plan of treatment the writer has seen about sixty cases of scarlet fever, and of these, only five cases have been followed by nephritis, which was in each instance slight and transitory.

These results, the credit for which is probably largely due to the therapeutic measures employed, have been so satisfactory to the writer that he has ventured to describe them at length before the society, hoping that those members who will do him the honor of participating in the discussion will furnish data, based upon their own experience, facilitating the elimination of any faults of his method, or justifying the substitution for it of some better plan for the prevention of scarlatinal nephritis.

A CASE OF
SPONTANEOUS PODALIC EVOLUTION.

By JULIUS ULLMAN, M. D.,
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HOUSE PHYSICIAN, CITY HOSPITAL.

In a recent number of the *Medical Record* (vol. xliv, No. 17, p. 517) Dr. J. McGillicuddy referred to spontaneous evolution, and as this termination of a seemingly difficult labor is both rare and often fortunate, I would report a case which occurred at the Rochester City Hospital during the service of Dr. W. S. Ely:

Mrs. E. S., aged thirty-four years; occupation, washerwoman; born in Ireland; multipara. Had four normal labors, two abortions; last child two years old. Patient was treated at the outpatient department July 5, 1893, for syphilis. At this time was about five months pregnant. Was again examined September 27, 1893, and no fœtal movements or heart sounds could be heard. She was advised to enter hospital at this time. Entered hospital October 22, 1893, at noon. Patient said she was eight months pregnant. Examination revealed no fœtal heart sound or movements, and a transverse presentation. Membranes ruptured at 3 P. M. At 8 P. M. pains became very strong; the right shoulder presented and became fixed under the symphysis pubis, and its corresponding hand and arm protruded from the vulva.

It was determined to perform podalic version, and the usual preparations were made. Before, however, they were completed spontaneous podalic evolution took place and delivery was effected by the mother's unaided efforts. The breech and right arm presented and the thorax and head followed. The placenta was expelled simultaneously. The fœtus was dead, partially macerated, and mobile. The placenta was somewhat small and degenerated; the amniotic membranes were not intact, necessitating the introduction of the hand into the uterus for removing portions of the secundines. An intra-uterine douche was given. The woman made a complete recovery. The highest range of temperature during the puerperium was 100·2° F.

A CHERRY STONE IN THE NOSE.

RHINOLITH; REMOVAL.

By GEORGE F. KEIPER, M.D.,
LAFAYETTE, IND.,
EYE AND EAR SURGEON TO ST. ELIZABETH HOSPITAL.

Mr. C. W. G., of Oxford, Ind., came to me on account of deafness and profuse purulent discharge from both ears. His constitution is frail. He is thirty-five years old. For fifteen years he has had catarrh in very marked form, and it has caused him much trouble financially and physically without securing relief. He said that no one had ever looked into his nose, but every one had doctored it empirically. Examining the nares, marked hypertrophic rhinitis was found. In the left nostril the probe clicked upon a hard substance posteriorly situated. I attempted its removal. Was unsuccessful then because my patient fainted. However, on October 12, 1893, its removal was again attempted—successfully then. It was impossible to dislodge it with a probe. I then introduced a heavy nasal duckbill forceps and crushed it and brought some fragments out anteriorly. The remainder was so large as to be impossible to remove anteriorly, and so it was shoved into the pharynx and coughed out through the mouth. Cocaine was, of course, applied during the procedure. It proved a rhinolith, being three quarters of an inch long in longest portion, half an inch wide in widest part, and nearly half an inch thick in the thickest portion. We scraped it and came across a very hard substance. We then broke it and found in its center a cherry stone. The surrounding material was calcareous. It is needless to add that his so-called catarrh is better, and that his middle-ear trouble is disappearing under proper treatment. I doubt not but that his middle-ear trouble was caused by the irritation which such a large foreign body would necessarily produce. He has no recollection of having put a cherry stone in his nose, but thinks he did when a very small boy as a boyish prank.

THE
NEW YORK MEDICAL JOURNAL,
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Frank P. Foster, M. D.

NEW YORK, SATURDAY, JANUARY 6, 1894.

THE FINANCES OF THE ACADEMY OF MEDICINE.

For the first time in many years, the report of the treasurer of the Academy of Medicine has been printed and sent to each of the fellows, who are the stockholders of the organization. This publication, we understand, was not accomplished without the vigorous opposition of some of the trustees, who are said to have taken the remarkable position that the fellows of the Academy should continue in ignorance regarding its financial status. Many of the fellows have desired a more detailed statement, but nobody has seemed willing to take the initiative toward requiring the trustees to print it. In fact, we have heard it stated that some of these officers seemed to think that the Academy was to submit to their dictation rather than they execute the will of the Academy. But the president, Dr. Roosa, urged that the fellows be made acquainted with the value of their property as well as with some of its needs, and a majority of the trustees have concurred in this sensible position and have published this report.

From it we learn that the receipts from all sources during the year 1893 were over sixteen thousand dollars, and the expenditures fifteen thousand dollars, of which almost four thousand dollars was spent for books, journals, binding, etc. It is to be regretted that the receipts are not greater, as it would then be possible to reduce the annual dues, that are now too high and prohibit a great many of the younger men from joining the Academy.

The income from the various library funds is less than nine hundred dollars, while the money now expended for books, etc., though four times that amount, is still insufficient to supply the wants of the library. It is to be hoped that some prosperous members of the profession or some wealthy laymen may appreciate the opportunities for good that further endowments would afford, and, if the matter is properly presented, we may expect further gifts to this valuable feature of the Academy. But, *en passant*, it would be possible to present a better argument for making such gifts if the recent rule of the library committee to close the library to all but fellows of the Academy after six o'clock were speedily revoked. Let the library do the most good to the greatest number; it was established as a public medical library, and it was largely on the strength of that function that some large gifts to the Academy were secured.

The statement of the building fund is even more encouraging. Through the generosity of certain fellows, as well as through the economical administration of the trustees, there are now but ten thousand dollars in bonds outstanding.

The report is a credit to the Academy and will undoubtedly increase the interest of the profession in this excellent organization.

THE NEW YORK AND BROOKLYN DEATH-RATES FOR 1893.

THE report of the Bureau of Vital Statistics of the Health Department of the City of New York shows that the total mortality in 1893 was 44,370, so that the death-rate was 23·4 in a 1,000. This is the lowest rate since 1877. In 1892 the deaths numbered 44,329 and the rate was 24·26 in a 1,000. The births reported in 1893 were 51,516 in number, and the marriages 16,144. The deaths of children under a year old numbered 11,105, those of children under five 17,872, and those of persons sixty-five years old or older 4,430; 10,600 deaths occurred in institutions. Among the principal causes of death, pneumonia appears to have been the most destructive. It caused 6,476 deaths, while pulmonary consumption caused only 5,101. Heart diseases occasioned 2,376 deaths, and the various forms of Bright's disease gave rise to 2,561. Cerebro-spinal meningitis is charged with an extraordinary total—467 deaths, a number almost equal to that attributed to croup, 587. Bronchitis caused only 1,569 deaths. There were 1,565 accidental deaths and 313 suicides. The following numbers of cases of various infectious diseases were reported: Diphtheria, 6,224; measles, 6,831; scarlet fever, 5,637; small-pox, 449; typhoid fever, 1,010; and typhus fever, 470. The mortality from these causes is to be published hereafter.

The usual Mayor's report in Brooklyn, regarding the year just closed, shows a death-roll of 21,380, with a part of the December mortality estimated, which is commensurate with a death-rate of 21·6 per mille. The population of the city was estimated at the middle of the year at about 988,200. The deaths and death-rate in 1892 were respectively 20,807 and 21·62 in a 1,000. The city was spared the visitation of cholera or any other severe pestilence. Small-pox reared its head from time to time, but was not allowed to assert itself long. A corps of vaccinating physicians, thirty in number, reported the performance of 11,000 vaccinations and 40,000 premises visited to offer protection against small-pox. The measures against cholera included the enlistment of the bacteriological services of Dr. George M. Sternberg, who has recently become the surgeon general of the army. The Brooklyn water supply was the point first investigated by General Sternberg. Under his supervision an analysis was made weekly, and a fair knowledge gained of the existing conditions. The mayor allowed a special anti-cholera expenditure of $7,500. The total expense account of the department having charge of the city's health was $190,000, of which $130,000 went for salaries. Among the other expenses were $15,000 for ambulances and $30,000 for the Contagious Diseases' Hospital. The reported number of births was, as usual, below that of deaths—namely, 19,300 births. The number of marriages was 7,350.

MINOR PARAGRAPHS.

MEDICAL MISSIONARIES IN AFRICA.

CAPTAIN LUGARD'S recent book* is replete with references to the Scottish and other medical missionaries he has met in eastern Africa. The captain offers his testimony in a nonpartisan way, since he does not admire all members of the missionary profession, but he freely admits that "he did not meet one Scotch missionary in Nyassaland whom he did not esteem. He has nothing," says a contemporary, "but praise for them and their methods. He considers that a missionary must, above all things, be a gentleman, 'for no one is more quick to realize a real gentleman than the African savage.' The captain evidently means both the spirit and manner of living of the missionary, and, of course, not anything in a merely conventional sense, as he adds that the dwelling-house of the missionary should be as superior to those of the natives as he himself is superior to them." The following citation from his book is the clearest statement made by an outsider that we have read touching the scope of medicine in the mission field. Captain Lugard says: "Beyond doubt, I think, the most useful missions are the medical and the industrial, in the initial stages of savage development. A combination of the two is, in my opinion, an ideal mission. Such is the work of the Scotch Free Church on Lake Nyassa. The medical missionary begins work with every advantage. Throughout Africa the ideas of the cure of the body and of the soul are closely allied. . . . As the skill of the European in medicine asserts its superiority over the crude methods of the medicine man, so does he in proportion gain an influence in his teaching of the great truths of Christianity. He teaches the savages where knowledge and art cease, how far natural remedies produce their effects, independent of charms or supernatural agencies, and where divine power overrules all human efforts. Such demonstration from a medicine man, whose skill they can not fail to recognize as superior to their own, has naturally more weight than any mere preaching. A mere preacher is discounted and his zeal is not understood. The medical missionary, moreover, gains an admission to the houses and homes of the natives by virtue of his art, which would not so readily be accorded to another. He becomes their adviser and referee, and his counsels are substituted for the magic and witchcraft which retard development."

LINEAR ATROPHY OF THE SKIN AFTER TYPHOID FEVER.

THE *British Journal of Dermatology* for December, 1893, contains the report of a case of typhoid fever in which lineæ atrophicæ appeared as a sequela. The patient came under the notice of Sir Dyce Duckworth, M. D., three months after recovering from a sharp attack of the fever, complaining of extraordinary sensitiveness of various stripes on the outer side of the thighs and on the legs above the malleoli. Examination of the parts revealed several longitudinal stripes of linear atrophy over the legs, with no other evidence of nerve disease. The occurrence of such a condition, together with the hyperæsthesia, pointed, the author thought, to the neurotrophic nature of the lesion, and indicated that both trophic and sensory branches of nerves might thus give token of the damage wrought upon them by the special toxine of typhoid fever.

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* *The Rise of our East African Empire*: Early Efforts in Nyassaland and Uganda. By Captain F. D. Lugard, D. S. O., etc. Two volumes. Blackwood, 1893.

TEUCRIN IN LOCAL TUBERCULOSIS.

The December number of *Les Nouveaux remèdes* refers again to the efficiency of teucrin as a remedy in the treatment of local tubercular affections. Mosetig-Moorhof, according to the *Wiener medicinische Presse*, has been giving the drug a fair trial and is highly satisfied with the results. The medicament is used subcutaneously at the base of the degenerated tissue, and cures by causing sloughing of the tubercular parts. Great judgment must be exercised, it is said, both as to the quantity of the drug used and as to the number of applications; one is to be guided entirely by the slowness or rapidity of its action. The author has never seen any systemic reaction to the drug exhibited, and thinks that, employed with care, it is a very safe and sure remedy for the extirpation of local tuberculous disease.

THE TEACHING OF COMPARATIVE ANATOMY IN CHICAGO.

The showing that Professor Ohlmacher is able to make, in his article published in this issue of the *Journal*, of the work accomplished by the students of the Chicago College of Physicians and Surgeons in elementary comparative anatomy and embryology seems to us most creditable. Such teaching must tend powerfully to raise up a generation of physicians and surgeons of far greater breadth and depth of education than can now be said to characterize the majority of our profession in the United States. It is graceful, too, on Professor Ohlmacher's part to put his pupils' achievements on record.

THE CONGREVE "REMEDY" FOR CONSUMPTION.

This name brings to mind those quackish "God-provided remedies" advertisements of which are almost constantly to be seen in the religious newspapers of Great Britain. Within the past year, we understand, a Congreve branch has been started in the United States, and fulsomely flattering advertisements have begun to crop out in our own religious journals. A published analysis tends to show that the Congreve medicines consist of an infusion of elderberries with Friar's balsam.

THE TOXICITY OF VIPER'S BLOOD.

The *Lancet's* Paris correspondent says that M. Phisalix and M. Bertrand have shown by experiments on guinea-pigs that the poisonous properties of viper's blood are considerable, and that the symptoms induced are of the same nature as those provoked by the same snake's venom.

ITEMS, ETC.

The Lunatic Asylums of New York State and the Commission in Lunacy.—In their fifty-first annual report to the Legislature, for the year ending September 30, 1893, just published, the managers of the Utica State Hospital say:

"Some friction having arisen between the Lunacy Commission and this board, as well as between the commission and other boards of managers, we are perhaps called on to correct some misrepresentations and submit to your honorable body our views on this important question. This board is not, as has been stated, opposed to State care, either in theory or practice. It favors State care wisely and honestly administered. This board has declined and still declines to sit in silence under wholesale accusations of mismanagement, not to say downright dishonesty, made in public prints at the instance of the Lunacy Commission. We felt it due our self-respect in a formal way to deny these groundless charges, and did so as publicly as they were made. Under the statutes as now construed, there is opportunity to place great responsibility upon managers should anything go wrong, but they are deprived of any authority whereby they can embody their convictions of what is best in any form more substantial than opinions and their verbal expressions. They can not order the purchase of even so much as a barrel of flour without the commission's consent, and, if refused, the flour can not be provided that month, though it stand between the patients and no bread. Were this the proper time and place, numerous instances illustrating this state of affairs could be given, showing how great hardship may be suffered by the hospitals as the result of arbitrary construction put upon this law in its practical enforcement.

"We do not wish to be understood as opposed to supervision. On the contrary, we approve of it and invite it. We do object to interference which is detrimental to the service and injurious to the patients who are the most unfortunate of the State's wards. Insane people are sick people and should be treated as such. There is no law and we hope there never will be a law which enables any taskmaster here or in Albany to drive these men and women out to work at hazardous or dangerous employment. We believe in proper occupation under competent supervision, as a remedial agent, and regard it as an important part of treatment. We hold, however, that it is an incident on the road to recovery and not the chief business of patients. We furthermore respectfully submit that there is a wide discrepancy between actual and alleged savings under the present system as enforced since October 1, 1893.

"If it be thought by your honorable body wise and best to put the entire control and management of the nearly nine thousand insane in the hospitals of this State into the hands of three men; if it is counted advisable to centralize the authority with the immense power which in this case accompanies it; if it is deemed desirable to make the several institutions part of one monstrous machine absolutely manipulated and governed from the capitol of the State, then present tendencies should be encouraged. In such a view of it there is no longer any need for boards of managers, and the theory of home rule is abrogated and the pretense of it need be no longer maintained. We believe the managers chosen by the Governor and confirmed by the Senate are men of character and ability, who can be trusted to honestly conduct the State's greatest charity. That it should be done under some competent and broad-minded supervision we affirm, but that it should be arbitrary to the last penny we not only question, but emphatically deny.

"We respectfully submit that managers who weekly and often twice or three times a week visit the hospital are better informed of its actual needs than any central authority can be which of necessity is able to make personal inspection only a few times each year. In such large institutions there often arise emergencies demanding prompt attention and instant expenditure. The delay in sending to a busy commission a hundred or more miles away, whose members at that time may be on a tour of inspection anywhere in the State, is often the loss of valuable time liable to prove dangerous and disastrous. Furthermore, it is frequently very difficult by telephone, telegraph, or letter to make plain a series of circumstances or a state of affairs which would be apparent at a glance to a person on the ground and in possession of all the facts. If local boards of managers are to exist at all and be useful, they should have larger powers and more latitude than is allowed them by the present narrow construction put upon the statute. We resent as unfounded and undignified the insinuation of the commission that power is asked by the managers only for the pleasure its exercise may afford. They serve without salary, nor have they been guilty of any attempt to glorify themselves either for real or imaginary accomplishments. They give their time and strength as a part of a citizen's obligation, feeling that the best evidence of appreciation for an honorable appointment is the conscientious discharge of the duty it imposes. The accusations of the commission to the contrary notwithstanding, the history of this present board of managers ought to be of itself a refutation of any charge, and if it is not, the books are open for your inspection and the most careful scrutiny is invited. So long as we are intrusted by the State with a duty, the obligation to discharge it to the best of our ability can not go unheeded. We should certainly most cordially co-operate with any supervisory State authority, whose interest is the furtherance of the best service in the most economical way, and no account taken of personal preferment or ambition. Our attitude is not one of hostility toward any person or persons as such, but is rather the expression of our recognition of the duties and responsibilities which rest upon us in the conduct of a great charity. Responsibility without power is useless and, as we believe, unfair and unjust.

"We beg to suggest that at its present session your honorable body give attention to this phase of the subject, with a view to harmonizing existing difficulties and differences, that the insane may be most intelligently cared for, that the service may be improved, and the administration made at once wise and economical."

We think the managers are warranted in their contention, and it is gratifying to observe that that portion of the Governor's message that refers to the matter is more favorable to them than might have been expected from the newspaper reports of recent conferences on the subject in which the Governor took part.

The New York Academy of Medicine.—The programme for the meeting of Thursday evening, the 4th inst., included a paper entitled Observations upon Abdominal Surgery in Relation to the General Practitioner, by Dr. A. Vander Veer, of Albany.

At the next meeting of the Section in General Surgery, on Monday evening, the 8th inst., Dr. James P. Tuttle will read a paper on The Modern Treatment of Hæmorrhoids, Dr. C. A. Powers will read one entitled Further Observations on the Physiological Occurrence of Conical Stump after Amputations in Children, and Dr. Willy Meyer will present a portable sterilizer for private operations.

At the next meeting of the Section in Genito-urinary Surgery, on Tuesday evening, the 9th inst., Dr. C. W. Allen will read a paper on Gangrene of the Scrotum.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 11th inst., the subject of skin diseases in children will be discussed by Dr. L. Duncan Bulkley, Dr. J. P. McGowan, and Dr. George H. Fox; and Dr. Henry Koplik will read a paper on Anal Fissure and Painful Erosions of this Region in Infants and Children.

At the next meeting of the Section in Neurology, on Friday evening, the 12th inst., Dr. Charles H. Knight will read a paper on Reflex Disturbances allied to Lesions of the Rhino-pharynx, and Dr. Lightner Witmer will read one on Pain from the Point of View of the Psychologists.

The Shelby County, Indiana, Medical Society.—At the next meeting, on Monday afternoon, the 8th inst., Dr. I. W. Inlow will read a paper on Alcohol.

Changes of Address.—Dr. W. H. Bates, to No. 173 Remsen Street, Brooklyn; Dr. R. Harvey Reed, from Mansfield, O., to No. 150 East Broad Street, Columbus, O.

The Death of Dr. Francis Minot Weld, of Jamaica Plain, Mass., occurred on December 31st. Dr. Weld was born in 1840 at Dalton, N. H., and was graduated in arts and medicine from Harvard University. During the late war he served as a medical officer in the navy and afterward in the army. In 1866 he settled in New York, and for a time held the medical superintendency of the New York Hospital. He was one of the founders of the University and Harvard Clubs, and had been president of the latter.

The Death of Dr. Robert C. McEwen, of Saratoga Springs, N. Y., occurred at his residence on the evening of December 26th, in the sixty-first year of his age, from intercurrent pneumonia following cerebral embolism.

He was a graduate of Williams College, of the class of 1853. His first course in medicine was at Yale, and he studied in the office of Dr. N. B. Ives, of New Haven. He then entered the office of the late Professor J. M. Smith, of New York, and was matriculated at the College of Physicians and Surgeons. He was graduated from that school in 1856 and became at once attached to the house staff of Bellevue Hospital. After the close of his term in the hospital he went abroad, and upon his return, in 1860, began practice in Stratford, Conn. When the war broke out he entered the field as assistant surgeon of a Connecticut regiment and remained in the service until September, 1863, when he resigned on account of sickness and soon afterward began practice in New York. At the end of three years he moved to Saratoga, where he continued in active work up to within a few weeks of his death, and was honored by everybody in the community in which he had lived so long.

The Death of Dr. Horace Hollister, of Scranton, Pa., removes one of the pioneers of the Lackawanna region. He was a graduate of the Medical Department of the University of the City of New York, of the class of 1846. He was an authority in local archæology, the historiographer of the Lackawanna valley, and a collector of aboriginal relics and of Americana. His collections are among the finest in the country. His death occurred on December 29, 1893, in the seventy-first year of his age.

The late Sir Andrew Clark's Estate.—According to the *British Medical Journal*, the net personal estate in the United Kingdom left by the late Sir Andrew Clark, M. D., amounts to £203,969. Among his bequests was one of £500 to the London Hospital Medical College for the foundation of a scholarship.

Society Meetings for the Coming Week:

Monday, *January 8th:* New York Academy of Medicine (Section in General Surgery); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Lenox Medical and Surgical Society (private); Boston Society for Medical Improvement (annual); Gynæcological Society of Boston; Baltimore Medical Association; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Shelby County, Ind., Medical Society.

Tuesday, *January 9th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private, election); Kings County, N.Y., Medical Association; Medical Societies of the Counties of Chautauqua (semi-annual), Chenango (annual), Clinton (annual—Plattsburg), Erie (annual—Buffalo), Genesee (semi-annual—Batavia), Greene (quarterly), Jefferson (annual—Watertown), Livingston (semi-annual), Madison (semi-annual), Oneida (semi-annual—Rome), Onondaga (semi-annual—Syracuse), Ontario (quarterly), Oswego (semi-annual—Oswego), St. Lawrence (annual), Schenectady (annual—Schenectady), Schuyler (annual), Steuben (semi-annual), Tioga (annual—Owego), Wayne (semi-annual), and Yates (semi-annual), N. Y.; Norfolk, Mass., District Medical Society (Hyde Park); Newark, N. J., Medical Association (election); Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Trenton, N. J., Medical Association (private); Northwestern Medical Society of Philadelphia; Baltimore Gynæcological and Obstetrical Society; Practitioners' Club, Richmond, Ky.

WEDNESDAY, *January 10th:* American Microscopical Society of the City of New York; Metropolitan Medical Society (private); New York Pathological Society (annual); New York Surgical Society; Medical Societies of the Counties of Albany and Dutchess (annual—Poughkeepsie), N. Y.; Tri-States Medical Association (Port Jervis, N. Y.); Pittsfield, Mass., Medical Association (private); Hampshire (quarterly—Northampton) and Worcester (Worcester), Mass., District Medical Societies; Bennington, Vt., and Hoosick, N. Y., County Medical Society (annual—Arlington, Vt.); Philadelphia County Medical Society; Kansas City, Mo., Ophthalmological and Otological Society.

THURSDAY, *January 11th:* New York Academy of Medicine (Section in Pædiatrics); Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society (annual and election); Medical Societies of the Counties of Cayuga, Fulton (annual—Johnstown), and Rensselaer (annual), N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

FRIDAY, *January 12th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties.

SATURDAY, *January 13th:* Obstetrical Society of Boston (private); Worcester, Mass., North District Medical Society.

Proceedings of Societies.

PHILADELPHIA ACADEMY OF SURGERY.

Meeting of December 4, 1893.

The President, Dr. WILLIAM HUNT, in the Chair.

Remarks upon the Treatment of Stricture of the Sigmoid Flexure and of the First Portion of the Rectum.—Dr. JOHN B. DEAVER read the following paper:

My object in offering a few remarks upon stricture of the sigmoid flexure and of the first portion of the rectum this evening is to obtain the views of the fellows present upon this, which is certainly a very important, subject, and to place upon record a case of stricture of the terminal portion of the sigmoid flexure and of the first portion of the rectum, recently under my care, in which the passage of a flexible rubber bougie (Wales) but one size, French scale, larger than that which had been passed many times before, caused perforation of the rectum below the stricture, resulting in the death of the patient within twenty-four hours thereafter from peritonitis. In order to discuss this subject to the best advantage I may be permitted to refer to one or two points in the anatomy of the first portion of the rectum, also to say a word or two concerning the diagnosis of stricture situated beyond the reach of the finger.

The rectum does not, as is usually described, begin at the brim of the pelvis opposite the sacro-iliac synchondrosis, whence it extends to about the center of the third piece of the sacrum and descends in front of the sacrum, the coccyx, etc., but commences at the terminal part of the omega loop, to which attention has been called by Treves as being the shape of the sigmoid flexure, and not S-shaped in answer to the description in the text-books on anatomy. Careful examination by myself of many bodies has confirmed the above statement. All of the omega loop, which includes the first portion of the rectum, occupies the pelvis in the adult. It will thus be understood that the first portion of the rectum makes with the second portion a decided angle; therefore an instrument of the caliber of the normal bowel, unless it be a flexible one which will pass through the third and the second portions, will not prove anything regarding the caliber of the first portion. Again, from the relation borne between the second and the first portions of the rectum much may be learned about the latter if it be infiltrated, upon introducing the finger into the second portion, through the walls of which the infiltration may be detected. The best form of flexible rubber bougie is one which is hollow, as the Wales instrument is, to the lower end of which can be attached a fountain or Davidson syringe, and water thrown through this, favoring its passage by drawing out of the way the folds of the mucous membrane which would otherwise form an obstruction to its introduction.

The diagnosis of stricture of the second and third portions of the rectum is readily made by the sense of touch. When the index finger is not long enough to reach beyond the second portion with the patient lying on the back, it may be done with ease if the patient be turned upon the left side and the thighs slightly flexed upon the abdomen and the finger introduced into the anus from behind, as the tissues of the perinæum can be carried a little distance in advance of the web of the index and middle finger. Contraction in this part of the bowel can often be diagnosticated by the introduction of a short, flexible Wales bougie, but the finger is the more trustworthy instrument. This, too, is the only portion of the bowel where we shall all admit that the operation of proctotomy for the relief of a contraction is admissible. The soft, flexible rubber bougie is the only instrument that can be carried safely as well as surely through the upper portion of the rectum and the sigmoid flexure. The non-flexible rectal bougie is not only an unsafe instrument, particularly where the stricture is situated beyond the second portion of the rectum, but one which may mislead the surgeon in making a diagnosis of stricture when it does not exist.

The first portion of the rectum, like the sigmoid flexure, is connected to the back part of the abdominal cavity by a reflection of the peritonæum, the meso-rectum. On account of the bend made by the junction of the first and second portions of the rectum, it can be readily seen how the point of a non-flexible bougie is arrested by contact with the wall of the bowel at this point, which offers resistance to its further passage, and a diagnosis of a pathological obstruction made; or it may be that the bowel, owing to the meso-rectum being preternaturally long, will be carried in advance of the point of the instrument to or beyond the median line in the neighborhood of the pubes, while, if the instrument by chance should pass into the sigmoid flexure, the latter, owing to the meso-sigmoid, may be carried to or beyond the median line in the neighborhood of the umbilicus, which, in either event, might give rise to the belief that the bougie had passed into the bowel beyond, if not through, a supposed stricture.

There is a question of doubt in the minds of some as to the possibility of being able to carry a flexible rubber tube or bougie through and beyond the sigmoid flexure. This has been tried upon the dead body in a number of instances, and, not having proved successful, the deduction has therefore been made that it is impossible to do it in the living subject. While

I am aware of the difficulty attendant upon the introduction of an instrument into the descending colon in the dead body, due chiefly to the absence of muscular contractility, which facilitates the passage of the instrument on the one hand and offers a very decided barrier against its introduction on the other, also to the absence of the normal moisture in the shape of the mucus, I can not admit this to be so.

We well know that it is much easier to introduce a bougie through the normal urethra in the living subject than it is in the cadaver, and yet this ought to be more readily accomplished in the case of the urethra, where counter-pressure can be brought to bear to aid in the introduction of the instrument, than in the case of the bowel. I have very satisfactorily demonstrated upon many occasions the possibility of being able to circuit the sigmoid flexure with a soft, flexible tube such as the long flexible rectal bougie and the long flexible colon tube. In certain cases of intestinal obstruction I regard the passage of a soft, flexible tube into the sigmoid flexure, through which water can be thrown and the capacity of the large bowel ascertained, an important aid in the diagnosis between obstruction of the small and obstruction of the large intestine.

With the subjective symptoms of stricture of the large bowel present—namely, constipation, or may be attacks of diarrhœa—the passage of ribbon-shaped stools or of choppy stools covered with mucus and blood, or preceded or followed by the passage of mucus and blood attended by tenesmus, the lower portion of the rectum being intact, as proved by a digital examination, it does not absolutely follow that a stricture is the cause in all instances, as we may see this train of symptoms consequent upon a subacute or chronic catarrhal inflammation of the colon, of the sigmoid alone, or in ulceration of the sigmoid flexure; therefore, before we can get more definitely at the exact condition of affairs it will be necessary to resort to instrumental interference in the introduction of graduated sizes of flexible rubber bougies, when a diagnosis can generally be arrived at with a very fair degree of certainty. This should be done with all due care, and preferably by one experienced in the use of these instruments, as it has been demonstrated, particularly in the case I report to-night, that serious results can accrue from even the passage of a soft instrument, which argues strongly against the use of inflexible or semi-flexible instruments. From the relation the first portion of the rectum holds to the second when the former is the seat of extensive thickening or the walls contain a growth, upon digital examination this can usually be detected. In this class of cases, as in disease of the second and third portions, if in the female, much can be learned by careful digital examination of the vagina. I have on several occasions been able to feel with the finger masses in the first portion of the rectum, as well as the presence of a growth which had assumed some size in the terminal portion of the sigmoid, by carrying the vault of the vagina well in advance of the examining finger, aided, too, by counter-pressure made over the abdominal walls. Further, I believe these examinations are better made without ether, having the feelings of the patient to guide us and with less risk of injuring the bowel.

Where a mass is suspected in connection with symptoms of stricture, which would suggest malignant disease, there is considerable to be gained, however, by giving the patient ether, under the influence of which the abdomen can be palpated more satisfactorily. Another means of diagnosis—that of dilating the sphincter of the anus and the introduction of the hand into the rectum and the sigmoid—I have never had the courage to do. In cases of great doubt, rather than resort to the last procedure, I deem it more advisable to do an exploratory abdominal section. Exploratory abdominal section, however, done for the purpose of diagnosis in the questionable cases of stricture of the sigmoid and the first portion of the rectum, I am not a strong advocate of, as I think that a diagnosis in the majority of cases should be made without resorting to so complicated a measure. While I am aware of the little risk attending an exploratory abdominal section under strict cleanliness, I think the principal objection to be urged against it is that it lessens the responsibility of the surgeon as a diagnostician. Apart from this, I fear the modern tendency is too much in the direction of exploratory incisions in other regions of the body, as well as the abdominal cavity, for diagnostic purposes.

The operation should be the natural sequence of the diagnosis and not the diagnosis to the operation. Perfecting one's self in diagnostic attainments is certainly more creditable to a surgeon than to feel forced to have to open the belly cavity to determine that which may be done without.

The majority of cases of benign stricture involving the first portion of the rectum are amenable to treatment by either the bougie or colotomy. Stricture of the sigmoid flexure, very rare except when of malignant origin, is not nearly so favorable for gradual dilatation by the bougie. Stricture here located, be it benign or malignant, if the inflammatory process has not advanced too far to permit of resection and anastomosis, or perhaps circular enterorrhaphy, the most that can be hoped for in the majority of instances is the establishment of an artificial anus in the loin.

The choice between iliac and lumbar colotomy must depend upon the merits of each case; ordinarily I prefer to make the operation through the loin. The only advantage I can see in the anterior (iliac) operation is the opportunity it affords to determine definitely the condition of the bowel, if a resection and anastomosis or enterorrhaphy is possible, and, if nothing short of an artificial anus will suffice, the making of it at once.

In a paper I read before the Philadelphia County Medical Society two years ago upon Lumbar *versus* Iliac Colotomy, I took the ground that the lumbar operation was the more preferable, inasmuch as the diagnosis of the condition rendering the operation of colotomy necessary should, in the majority of the cases, be made without having to open the peritoneal cavity as is done in the iliac operation.

In benign stricture of the sigmoid flexure and of the first portion of the rectum, I recommend gradual dilatation by means of the flexible rubber bougie. When this is not possible, more radical measures must be adopted. In malignant stricture of the above portions of the bowel the bougie can do nothing other than harm; directly, by hastening the diseased process, and indirectly, by misleading the patient in having him believe that an operation will not be required. I believe the earlier radical operative interference in malignant disease of the bowel is instituted the better, and that if this practice was followed in all instances patients' lives would certainly be very materially prolonged and, in some cases, the disease perhaps eradicated by removing it while yet local. What holds good in the uterus and elsewhere regarding affections of this character, holds equally good in case of the bowel, the difficulty in affections of the latter organ being that not exposed to the sense of sight, the diagnosis can not be made with the same degree of certainty as in like conditions of the uterus, the breast, etc.

The advisability of furnishing the patient with a bougie and instructing him to pass it himself I am inclined to question; I think this is better done by the surgeon. In addition to instrumental and operative treatment, much is to be gained by constitutional treatment, particularly if the case be of specific origin; but unless the history clearly points to this we should be careful not to push the treatment too far for fear of the debilitating effects; by attention to the general health, by the administration of tonics, by advising the proper diet, by giving tonic laxatives to have the bowels moved daily.

In cases where tenesmus is excited by the presence of a collection of mucus it is advisable to introduce a long flexible rubber tube beyond the stricture, through which the bowel can be irrigated with warm water or with mild antiseptic astringents.

The following is the case I have referred to above: F. W. R., aged about thirty years, consulted me July 27th, stating that he had a stricture of the large bowel, for which he was passing at intervals of from four to five days Nos. 9 and 11 Wales bougies by the advice of his physician. Upon being questioned, he described the symptoms characteristic of stricture of the sigmoid flexure, or of the latter and first portion of the rectum. He further stated that without the aid of medicine taken internally or the use of enemas it was impossible for him to have a passage. Digital examination of the rectum revealed nothing other than a rather capacious organ. Examination with the bougie showed the presence of an unquestionable obstruction nine inches within the anus. I advised continuance of the local treatment, but disapproved of his using the bougie himself. I I passed a bougie up to the time of his last visit to me, when, upon introducing one a size larger than the one usually used—namely, No. 12—which I had also passed before with but little difficulty, as the point of the instrument was engaging in the stricture he suddenly lurched forward upon the operating chair, and before I could withdraw the instrument he rebounded, as it were, upon the point of the bougie. This was immediately followed by severe abdominal pain. I feared the bowel had been penetrated on the anal side of the stricture, but was not certain, as the instrument was withdrawn clear of blood, and there was no blood passed after its withdrawal. I advised that he go to the hospital, where he would have the benefit of absolute rest and at the same time give me the opportunity of having him closely observed. Contrary to my advice, he went to his place of business, but came back to my office some time afterward, complaining of the pain being as severe as when he left me earlier in the morning. He now consented to go to the hospital. The pain was so severe as to require large doses of morphine to relieve him. He would not consent to an abdominal section, therefore I was powerless to do other than administer anodynes, counterirritants, etc. He died during the following night. The abdominal walls remained perfectly rigid, with the absence of tympany until four hours before he died, when there was pronounced distention. An autopsy made shortly after death showed the presence of a purulent peritonitis and a linear stricture involving the terminal portion of the sigmoid flexure and the first portion of the rectum. The bowel immediately below the stricture, which was very much dilated, with the wall nearly as thin as tissue paper, showed a perforation. Upon opening the bowel, there were present cicatrices which were evidently the result of ulceration. There were present old adhesions in the abdominal cavity in the neighborhood of the descending colon and sigmoid flexure. Upon opening the chest, there were present adhesions at the apices of the lungs. There was no further evidence of organic disease.

A few hours before his death, in a conversation with his mother, I learned, much to my surprise, that he had for some time back been giving himself an enema after each meal; this, to some extent at least, evidently accounted for the very much dilated and thin condition of the wall of the bowel, rendering it susceptible to penetration by the bougie.

The President said: I have recorded the following case in several places: Years ago I attended a gentleman who, as a result of disease of the cervical medulla, was thoroughly paralyzed. Every day the intestines would fill with flatus, and I would inroduce a tube beyond the sigmoid flexure and allow the gas to escape. This could be done in this case without the slightest difficulty. I do not know whether or not the relaxation from the paralysis had anything to do with it. I have tried to repeat the procedure since in the living subject, but have not succeeded, I have also read in some French authorities that it is impossible.

Dr. Thomas G. Morton said: I have knowledge of two cases of rectum perforation, neither of which was in my practice. The first case was a female of sixty or more years of age, who had been subject during the greater part of her adult life to constipation, for which enemata and mild laxatives gave relief. For a month or two before her death this condition had become more troublesome, and relief only partial; a digital examination by her physician, who pronounced double stricture with fæcal accumulation and advised bougie dilatation; and shortly afterward made an attempt at digital stretching, which was followed by the introduction of a tube and an enema. An hour later the patient went into shock, and then profound collapse, and died forty-eight hours later. The autopsy showed an organic stricture, and a perforation of the bowel and general peritonitis, the injection having been thrown into the abdominal cavity.

The other case was a very similar one; intense pain followed the use of the dilator and injection, and the patient died very shortly, of peritonitis. I have, however, treated very many strictures at the location mentioned by Dr. Deaver, where much relief was afforded by the use of bougies.

Dr. T. S. K. Morton said: The reader of the paper stated that he had found a capacious rectum, and said he believed that possibly the distention and weakening of the rectum were due to the frequent use of enemata. I call to mind an article by Mr. Thomas Bryant, referring to stricture of the rectum, in which he spoke of "ballooning" of the rectum as one of the symptoms. He regarded it as almost diagnostic of stricture. Mr. Bryant offered a number of theoretical explanations for the condition, all of which I do not at the moment recall. One was atrophy, from interference with nutrition; another, the retention of gas. He did not mention the possibility of its resulting from the use of enemata.

Dr. Deaver said: I was especially desirous of reporting this case, as the perforation was made by a soft instrument—much more flexible and soft than is used by most surgeons. It is only in recent years that I have been induced to use the soft instrument. I was surprised to have a result of this kind with an instrument which will double on contact with the hands.

I recall the paper of Mr. Bryant to which reference has been made. I have noticed this ballooning of the rectum in many cases, and in some cases of acute mechanical intestinal obstruction from plastic peritonitis, appendicitis, etc. It seems to be associated with obstruction of the bowel, and perhaps in my case it was a consequence of the stricture; but I think it is bad practice to use enemata at the rate of three a day, for fear of bringing about an atrophic condition of the bowel. In my paper I advise against the use of instruments in the rectum, as the finger is the best instrument; but beyond the second portion of the rectum we are not able to discover a stricture with the finger, and we must use a bougie. These are difficult cases to diagnosticate, and there is always an element of risk in the use of a bougie.

Tetanus.—Dr. William G. Porter reported the following: Helmer E., aged twenty-three years; nativity, Sweden; occupation, machinist; weight, two hundred and fourteen pounds; height, six feet two inches. Patient presented an excess of adipose tissue; skin and mucous membranes pale; had had pneumonia in 1892; was addicted to the use of alcohol, especially beer.

He was brought to the Philadelphia Hospital on thefourth day of the disease, at 1 A. M., November 11, 1893, with the history of having run a rusty nail in the sole of his foot, two weeks previously, while working in a cellar.

The wound gave no trouble, healing in a few days. Ten days after the injury he noticed some pain upon swallowing. The next morning his jaws were stiff, by evening he could not open his mouth, his back was stiff and the seat of severe pain, which he described as feeling like a band of constriction, passing from the back around the abdomen and down into the legs. Upon admission the jaws were firmly locked, the masseters hard, risus sardonicus present. There was a moderate degree of continuous opisthotonus, the abdominal muscles were board-like, and when lifted from the stretcher to the bed he moved as if made of one rigid piece, there being no motion in any joint from his head to his feet. Paroxysmal spasms occurred every one to three minutes, increasing the contractions of all the muscles involved in tonic spasm.

His pulse was soft and rapid, heart sounds weak, temperature 99° F., bowels had not moved for three days. An evacuation was secured by means of croton oil and a laxative enema. A little ether was given and a free and deep incision made where the punctured wound had been; it was thoroughly cleansed with bichloride (1 to 200), and a wet bichloride dressing applied. He was placed upon the combined bromides, forty-five grains, with chloral, fifteen grains, every three hours. Nitroglycerin, one drop, every fifteen minutes till three doses were given, then every hour till there was flushing of the face, then every two hours.

Uranalysis showed a high-colored urine, specific gravity 1·033, a decided ring of albumin, an excess of chlorides, and a few granular casts.

The full effect of the chloral was not secured till the third day after admission, when there was given by the bowel during the afternoon two drachms of chloral with five drachms of bromides. He now slept soundly, and during the sleep there was less arching of the back and some relaxation of masseters. The paroxysmal spasms, however, did not seem to be influenced by the chloral. Its use by the bowel was continued, giving it in such doses and at such intervals as seemed indicated.

A free perspiration marked the entire course of the disease.

Within a few hours after admission the temperature became normal, and remained so till the seventh day, when it began a slow but continuous ascent.

Feeding was not difficult; the nozzle of the feeding cup was placed between his lips and the contents found their own way to his throat, frequently, however, causing repeated spasms of the pharyngeal muscles. For the first few days he was eager for milk, and five pints were given daily; later he did not care for nourishment, but continually craved beer. Eggs were given in milk and with sherry wine.

During the seventh day of the disease there was much less pain in the back. There was considerably less spasm; patient expressed himself as feeling much better. His mind had been perfectly clear up to this time, but during the night there was a little delirium, and a slight tendency to pick at the bed clothes.

Eighth day.—Lower jaw drops a little during sleep, head not thrown back, paroxysms frequent but not severe. During the night considerable delirium and some twitching of the muscles and carphologia.

Ninth day.—All continuous spasm had disappeared, mouth open, and a guard was placed between the teeth to protect the tongue being bitten during the paroxysms, which were marked by prompt snapping of the jaws. At 5.30 P. M. he had a prolonged and severe spasm, after which there was a great muscular relaxation; urine and fæces were passed involuntarily, respirations became very shallow, no radial pulse could be felt, and he became profoundly unconscious.

At noon his temperature had been 104°; at 5.30 it was 106°; at 6, 107°; at 6.30, 108°; at 7, 109°. At 7.20 the heart ceased beating. Shortly after the cessation of respiration, half an hour later, the temperature of the body was 111°. Antitoxine: Upon the evening of the seventh day the administration of antitoxine was begun. It was deeply injected into the muscles of the thigh twice daily in ascending doses. The first dose was 20 centigrammes, the last dose 160 centigrammes.

This treatment appeared to have no influence upon the symptoms. There were no local effects at the points of injection. The temperature had begun to rise before the first dose was given.

A post-mortem examination was not secured by the hospital authorities, but was, however, secured after the removal of the body. The membranes of the brain and cord were found intensely hyperæmic; the brain was œdematous; the ventricles and central canal of the cord were distended with fluid. The brain and cord are preserved for further examination.

Heart flabby and relaxed. The blood in the auricles and great vessels was dark and fluid. Nothing noteworthy found in other organs.

For these notes and her untiring care of the patient I am indebted to my very efficient resident, Dr. Emma J. Lucas, and for the opportunity of using the antitoxine to Dr. William E. Hughes and Dr. Carter, who furnished the material and made the injections.

Dr. JOHN B. ROBERTS said: I have been much interested in Dr. Porter's account of the unsuccessful use of antitoxine in acute tetanus. I am inclined to believe, from what I have read, that most of the cases that have recovered have been rather mild cases, and that the more severe cases have not shown any very brilliant result from the use of such treatment.

Equino-varus with Dislocation of the Astragalus.—Dr. THOMAS G. MORTON exhibited a patient, aged twenty-two months, on whom he had operated for this condition. He had removed the astragalus from each foot.

The Radical Cure of Hernia by Bassini's Method.—Dr. JOHN B. DEAVER exhibited a patient showing the result of an operation which had been performed October 12th, on account of temporarily irreducible hernia and the inability to control the hernia properly by a truss. This operation had the advantage of not confining the patient to bed for a long time. It consisted practically in making a new inguinal canal. The hernia was exposed and the spermatic cord separated from the sac. The hernia was reduced and the sac tied off close within the abdominal cavity and the redundant portion cut away. The internal oblique and transversalis muscles, with the rectus, were then stitched to Poupart's ligament, the cord was placed over these muscles, and the skin and superficial fascia were placed over the cord. He used buried sutures of silkworm gut, which were allowed to remain.

Dr. JAMES M. BARTON said: On several occasions I have started to perform Halsted's or Bassini's operation, but when I have got to the ring I have found the hernia so old that there was practically no canal, one ring lying directly over the other, and, as it seemed to me impossible to perform either of these operations, I have performed the Macewen operation. In my earlier Macewen operations I cut off all but four or five inches of the sac, when it was very long, fearing there might be sloughing if I retained it all, but in the later operations I have used the entire sac, even when a foot long. I would ask Dr. Deaver if in these cases of large hernia, where the two rings practically correspond, he makes any attempt to do Halsted's or Bassini's operation?

Dr. DEAVER said: In answer to Dr. Barton, I would state that I have done very few of the Bassini operations, but in such cases as Dr. Barton mentions I have done Barker's operation, without, however, obtaining a permanent radical cure. This operation consists principally in tying off the sac at the internal abdominal ring. As Dr. Barton has pointed out, I think there would be some difficulty in doing Bassini's operation.

Reports on the Progress of Medicine.

PSYCHIATRY.

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Modification of Insanity by Intercurrent Cholera.—One of the interesting phenomena observed during residence in an asylum is the often remarkable effect upon the psychic condition produced by any severe intercurrent disease—such, for instance, as pneumonia, typhoid fever, erysipelas, and the like. It is rare, however, that an opportunity for the observation of this modification presents itself on so large a scale as it did recently in the Bonneval Asylum (*Journal of Nervous and Mental Disease*, September, 1893), where during an epidemic of cholera sixty inmates were attacked, and notes were made of their mental condition as follows:

For convenience of observation the patients were divided into five groups—maniacs, melancholiacs, the partially delirious, the organically insane, and idiots.

In the case of maniacs it was shown that, during its severe periods, cholera caused all maniacal conditions, of whatever character and of however long standing, to disappear; but, on recovery, the mental derangement returned by degrees.

Cholera usually modified the melancholic conditions for the better, but too few cases had been examined to warrant any final conclusions.

Persons slightly insane or melancholy had regained, to a greater or lesser degree, their mental soundness during the attack.

Those organically insane had not been affected mentally by the disease. In whatever case there had been maniacal excitement accompanying the delirium, this had disappeared entirely during the cholera attack. When delirium had accompanied a melancholy state, the latter had been more or less modified, but the delirium had remained.

One case had been that of a paralytic whose insanity had been of long standing and whose mind had not been perceptibly affected by the disease; but this single case proved nothing.

The idiots attacked had been too feeble-minded to afford a basis for determining results.

In every case, however, except the last, the patients had understood the danger of their condition, and had faced death calmly.

Puerperal Insanity a Toxæmia.—Dr. Menzies, of the Rainhill Asylum at Liverpool (*American Journal of Insanity*, October, 1893), presents a very interesting study of a hundred and forty cases of puerperal insanity Of these, thirty cases were insanity of pregnancy, sixty-four insanity of parturition, and forty-six insanity of lactation. The author rightly says that these various periods merge so imperceptibly into one another that any division must be to a certain extent arbitrary. He applies the term insanity of pregnancy to cases in which mental alienation was noted before the birth of the last child, and all that began two months after parturition he classifies as insanity of lactation.

While it is generally considered that puerperal insanity is apt to have a sudden onset, fifty-four per cent. of his cases presented prodromal symptoms. In all forms depression is the first manifestation, as a rule, in the form of sadness, distrust, apprehension, or religious awe. This period of depression may be of short duration or persist for months. States of depression are found in fifty-three per cent. of all pregnancy cases, in thirty-four per cent. of parturitional cases, and in seventy-four per cent. of lactational cases.

Pregnancy Types.—In nearly half the cases the patient imagines she is going to be killed or has committed the unpardonable sin, or else she combines the two ideas. In this type the delusion as to disloyalty on the part of the husband exists in but a small percentage. There are no distinctive mental features in this form by which we may distinguish it from other cases of melancholia. A physical examination is necessary. *Mania* of pregnancy, however, has distinct peculiarities, but it is rare and only eight of the author's cases presented this form. The chief diagnostic points of the insanity of pregnancy are: 1. Silent reserve and unsociability. 2. Strongly marked delusions of identity. 3. Religious or erotic impulse. 4. Rational performance of routine duties if the patient is left to her own resources.

Symptoms rarely present themselves before the fourth month of pregnancy, and most commonly develop in the fourth or fifth month.

Puerperal and Parturitional Types.—Delirious excitement is most usual, occurring in forty six per cent. of the cases. Suicidal and homicidal tendencies are not uncommon. Among the delusions of puerperal delirium, the most frequent is that of fear of impending violent death; but false identity, religious ideas, and hallucinations of sight and hearing are common. Acute delirious mania was present in but two of the author's cases. The tendency to relapse after apparent improvement or convalescence is great, and relapse is often quite sudden. Eighteen per cent. of the cases developed in the first week after confinement, fifteen per cent. in the second week, forty per cent. in the first month, and fourteen per cent. in the second month.

Lactational Types.—The same symptoms occur here as in the other forms, but the order of frequency of the types is different. Thus twenty-four per cent. show melancholic delirium, fifty per cent. quiet, depressed states, twelve per cent. mania, and fourteen per cent. maniacal delirium.

Any given case of puerperal insanity, of whatever type, may pass through six stages: 1. Prodromal disturbance. 2. Early delirium. 3. Melancholia. 4. Stupor. 5. Mania. 6. Dementia. Many patients pass through all the first five and yet recover, but, generally speaking, the fewer the stages the better the prognosis.

As regards the recovery rate, it is high in insanity of the puerperal period, as is generally conceded. Seventy-five per cent. of the author's patients whose cases were of the parturitional type recovered, but only 43·3 per cent. of the pregnancy type, and 56·5 per cent. of the lactational type. In the cases of recovery the duration of treatment until recovery was as follows: Eighteen recovered in two months, twenty-one in four months, sixteen in six months, seventeen in a year, and twelve in over a year.

Twenty-one patients died. Of these, ten had general paresis, five insanity of the parturitional type, and six insanity of the lactational type. Of the last eleven, six had phthisis, one general pyæmia, one *Schluckungspneumonie*, one coma and convulsions, one exhaustion and diarrhœa, and one acute delirious mania.

Some valuable facts are brought out by the author in regard to certain questions often referred to in connection with insanity connected with childbearing.

Thus, in seventeen of the one hundred and forty cases the mother evinced a feeling of hostility to her child, but in only two was there an attempt to kill it; fourteen patients attempted suicide before their admission to the asylum, and thirty-one patients showed erotic tendencies. Erotism plays an important part in the early puerperal period. It generally develops after confinement, but sometimes before it. Indecent overtures and attempts at exposure are made, and in the delirious conditions filthy jokes and grossly vulgar details of private life are given.

As to the influence of the unmarried state upon the production of puerperal insanity, only ten of his patients were single women, and of these, seven had led dissolute lives previously. The author is opposed to the idea that the shame of exposure and the worry incident to illegitimate pregnancy are causes of puerperal insanity.

Ten cases in the series of a hundred and forty were cases of general paresis, and the author is doubtful as to whether the connection between pregnancy and general paresis should be considered purely accidental.

Another interesting fact is the course of labor in insanity. It is generally precipitate. The rapidity of delivery is very remarkable.

Probably the most valuable part of this paper is the discussion of the pathology of puerperal mania. Dr. Menzies advocates the very sensible theory that the cause is self-intoxication. The maternal excretion is overtaxed by the considerable excretion of waste products from the fœtus, accounting possibly for toxæmia in the insanity of pregnancy. Delivery leaves the lymphatics choked with albuminous fluids of low vitality, which, if not excreted quickly, may change and poison the blood, in this way giving rise to the insanity of parturition. The drain of albumin in lactation possibly alters the chemical composition of the blood, and may thus give rise to the lactational type of insanity. These blood poisons engender the psychic symptoms naturally by their effects upon the intellectual substrata. In puerperal insanity a temperature of 101° F. is not at all uncommon, even in the lactational form. Cessation of the lochia invariably aggravates the mental condition, and involution is always retarded. There are waxy pallor, sallow skin, quick production of anæmia and wasting, and great destruction of hæmoglobin, all pointing to a blood condition and not to a cerebro-cortical disturbance. The universal benefit derived from a purge, the recognized objection to a drug like opium, which paralyzes osmosis, and the advantages of uterine douches, show that asylum physicians act up to the toxæmic theory, whether they admit it or not.

Readers are referred to the original for a very careful elaboration of the self-intoxication theory, but the main points are given above.

As regards treatment, the author believes in hydrotherapy, purging, good feeding, stimulants, rarely a hypotic (either chloral or paraldehyde), rest in bed, hot uterine douches, and stopping the secretion of milk, according to the case and its condition. Intestinal antiseptics he believes to be of little or no use. If they are to be employed, let it be creasotal in doses of from half a drachm to a drachm thrice daily. Creolin offers some advantages possibly, but is not palatable.

The Ætiology of Puerperal Insanity.—Idanof, of Moscow, has made a study of fifty-three cases of puerperal insanity, an account of which is published in the *Annales médico-psychologiques* for May and June, 1893. They were all cases of the parturitional form. He divides the causes into predisposing and exciting. In fifty-six per cent. heredity was marked, and forty-five per cent. of the patients were primiparæ. The author thinks infection occupies the first position as an exciting cause, and infection was certain in seventy per cent. of his cases. Eclampsia he also believes to be of an infectious nature. Emotional disturbances, he says, play an important part in causing puerperal insanity, and the percentage of such cases was twenty-six.

Narcolepsy.—Böhm, in an inaugural dissertation (Berlin, 1893), gives in detail the histories of four cases of this disorder observed in Mendel's clinic. Three were in females—aged, respectively, eleven, twelve, and thirty-one years—and one in a young man of eighteen years. In all his patients hysteria was marked, in two of the girls hystero-epilepsy existed, and in one of them there was also exophthalmic goître.

Narcolepsy was first described by Gélineau as a disorder manifested by an intense desire for sleep, occurring at short intervals. The afflicted patient falls suddenly into a deep sleep, no matter what he may be doing at the time, and is not awakened by being called, although a light touch rouses him instantly. Hysterical symptoms are certainly very often combined with narcolepsy, even if the latter is not to be considered simply as a manifestation of hysteria. In the three females described by Böhm the narcolepsy was of the above-described character, but the young man's case had a somewhat different course, marked by symptoms of a stronger hysterical nature (once a forty-eight-hour somnolent condition, subsequently a sleep of two weeks' duration, morbid movements of the eyelids and eyeballs, and limitation of the visual fields). He recovered suddenly after an attack of nose-bleed.

Traumatic Psychoses.—Jacobson, in the *Nordiskt med. Arkiv*, No. 13, 1893, gives a study of seventeen cases of cerebral disorder due to serious traumatism to the head, in which it is shown that, in the strict sense of the term, a traumatic psychosis does not exist—that is to say, a malady easily distinguished from other forms of mental disease. But it is true that the mental symptoms following head injuries often present analogies in a series of cases. The form of psychical disturbance is usually mental confusion, and this may be hallucinatory, maniacal, or stuporous, or even a chronic dementia with or without motor paralysis. He has observed several cases of general paresis that had been preceded by traumatism to the head, but he can not say concerning a single one of them that the head injury was the actual cause of the disease. In cases where syphilitic infection exists before the traumatism the ætiological rôle of the latter factor must remain doubtful. It may be supposed that, where the brain is already altered by syphilitic lesions, injuries to the head may more easily provoke psychic manifestations than under ordinary conditions.

The Chemistry of Digestion in Pellagrous Insanity.—Agostini has studied gastric digestion in twenty-two cases of pellagrous insanity (*Prag. med. Woch.*, 1893, No. 32) to determine the quantity of free nitric acid and the total acidity, to examine the peptones and pathological organic acids, and to observe the motor capabilities of the stomach. He found that gastric digestion was slow and inefficient in these cases. There was a diminution in peptones and in the total acidity. There was fifty per cent. less of free nitric acid. Often there were abnormal organic acids, especially lactic acid, and there was weakening of the motor functions of the stomach, with a secretion of mucus in abnormal quantity. Therapeutically, the author recommends *lavage* with salt water and the administration of nitric acid after meals.

The Bactericidal and Toxic Action of the Blood of the Insane.—In the *Rivista sper. di freniatria e di med. legale*, vol. xviii, d'Abundo describes experiments made with the blood of demented persons—paralytics, melancholiacs, paranoiacs, maniacs, idiots, and persons with pellagrous insanity—relative to its toxicity and bactericidal power. Eighty-six observations were made. The toxicity was determined by the injection of defibrinated serum into the auricular veins of rabbits, while the bactericidal power was tested upon the anthrax bacillus. Ten cubic centimetres to the kilogramme of normal blood kills rabbits by acute intoxication. He found that the toxicity and bactericidal power of the blood in depressed conditions was diminished, but in all other forms of insanity it was increased.

General Paresis in Children.—Wiglesworth reports in the *Journal of Mental Science* for July, 1893, three cases of his own of general paresis in children and five others collected from literature. The youngest patient was twelve, the oldest sixteen years old. The average duration of the disease was four years and a half—a longer average than in adults. Five of the patients were girls and three were boys. In only one patient were there grandiose ideas. All the other patients presented the dementia type of the disease. The signs of puberty failed to appear, none of the girls menstruated, and bodily growth seemed to be arrested. Excessive emaciation was striking. In two of the author's cases autopsies were made. The extreme atrophy of the brain was very noteworthy. Hereditary tendency was traced in four cases, and in two others marked alcoholism existed in the parents. The question of the relation of syphilis to general paresis is especially important in youth, and it is interesting to note that Wiglesworth reports but three of these as affected with syphilitic disease. In two patients trauma to the head seemed to have been an exciting factor. The writer then describes the cases of two lads, each aged eighteen years, who had general paresis, and in an appended note the case of still another juvenile who died at sixteen years of age with general paresis. Altogether, then, there were eleven patients under eighteen years of age.

Folie a deux.—In the *Annales médico-psychologiques* for May and June, 1893, Arnaud has published a study of *folie à deux* based upon cases recorded in French literature and upon three cases observed by himself. He divides such cases clinically into three groups: 1. Imposed insanity (*folie imposée*), characterized by the unusually small mental resistance of the second to the first attacked. 2. Simultaneous insanity (*folie simultanée*), in which natural proclivity, environment, and corresponding ætiological factors affect the two persons in the same manner. 3. A form in which the resistance of the second affected is at its maximum, and this patient is overcome only after a long battle, which finally exhausts his faculty of resistance.

There are three factors common to all forms of induced insanity—viz., a similar predisposition, long-continued and great intimacy of the two patients, and, lastly, a certain possibility or appearance of probability in the insane ideas. It is because of this last factor that most cases of *folie à deux* thus far published are of the character of paranoia with persecutory ideas. In all these cases there must exist an intellectual superiority of the first over the second patient. In the first form mentioned above, separation of the two patients gives the best therapeutic results; in the second form separation has no specially curative effect; in the third category, the second patient is apt to suffer in some different way.

In the *Finska Lakaresällskapets Handl.*, vol. xxxiii, part 5, Hongberg details a case of *folie à deux.* A midwife, aged thirty-four years, with no hereditary taint, in good health, visited a married sister in Helsingfors. While there she began to have delusions that she was guilty of sins that must do injury to others, and that she was engaged to some imaginary person of high social position.' At a second visit, a year later, she still had the same ideas. After leaving, at the end of this visit, she began a close correspondence with her sister, and her letters were chiefly made up of complaints of intrigues and persecution. At this time she was also the subject of hallucinations. Shortly afterward she was sent to the asylum at Lappwik. The second patient, the married sister, was twenty-nine years of age. At the first visit of her insane sister she took great trouble to combat the latter's delusions and to show how groundless they were. Her husband was taken ill with pneumonia, and she was much reduced in health by constant nursing, shortly after her insane sister's departure. She then became depressed and was the subject of delusions that the secret police were after her and intriguing against her. She then sought the author and told him how both she and her sister were persecuted. She showed evidence of hallucinations and was taken to the asylum. Both patients had then become persecutory paranoiacs, and the second was clearly suffering from induced insanity of the imposed form.

[In the *Alienist and Neurologist* for January, 1890, the reporter published four cases of *folie à deux* observed by him, one in considerable detail, and in that paper called attention to the fact that for the development of *folie à deux* the essentials were intimacy of the affected persons and plausibility of the insane ideas. He showed, further, that it was on this account that sisters were more apt to become victims because of their greater intimacy, and that delusions of a suspicious and persecutory nature, because more readily given credence, were more easily imposed upon a close associate. Hence the greater frequency of *folie à deux* among sisters, and the usual form of persecutory paranoia.]

Hystero-epilepsy and Insanity in a Boy caused by Bitter-almond Poisoning.—Brugia (*Il manicomio*, vol. viii, Nos. 2, 3) relates the case of a boy aged eight years, in perfect health, without hereditary taint, who was poisoned by drinking a considerable quantity of essence of bitter almonds. The intoxication was characterized by general cyanosis, deep coma, and tonic and clonic spasms. He recovered from the immediate effects promptly, but suffered subsequently from irregularly repeated convulsions, and was retarded both in physical and in mental development. His character became much changed. He became morally degenerated, was frequently brought into conflict with the law, and finally, on account of more frequent convulsions, was committed to the asylum at the age of twenty years. Here he was found to have hystero-epilepsy, and the seizures were marked by loss of consciousness and right-sided hemianæsthesia and hemianalgesia. The permanent symptoms were diminished sensibility and loss of taste, smell, and hearing upon the right side, together with diminution of the right visual field. There was pronounced moral and mental weakness, with a tendency to impulsive acts.

A Psychopathic Epidemic in Russia.—Ssikozski describes (*Universitelskija Iswjcstija*, 1893; *Neurolog. Centralbl.*, July 1, 1893) a peculiar religious movement that took place in the winter of 1891–'92 in the province of Kiev. The author was sent as an insanity expert and member of a commission to investigate the matter. It was determined that the originator of the movement was insane, and that most of his followers presented pathological evidences on the side of the nervous system and psychic functions. Hence he designated the movement as a psychopathic epidemic.

The originator was a Russian, from a country town, aged forty-five years, with intemperate ancestors, and himself given to drink until the age of forty years. He then gave up orthodox beliefs, went over to the sect of Stundists, stopped drinking, followed zealously the religious rites of the sect, and often went into a condition of ecstasy. A few years later he began to suffer from hallucinations of smell and general sensibility. He perceived extremely pleasant perfumes, which were comparable to no earthly aroma. This was the smell of the Holy Ghost. During prayer he experienced a remarkable feeling of joy and of bodily lightness, as though he were floating in the air. Then he conceived fixed ideas—that he was possessed of the Holy Ghost, that he was Jesus Christ, the Saviour of the world, that the Bible held prophecies relating to him, and so forth. He would fall into states of excitement and improvise sermons. He obtained numerous followers, who consisted of the peasant population of several hamlets in the province of Kiev. They were convinced of the truth of their leader's statements, were exalted and joyful, sold their possessions, gave up work, purchased holiday attire and ornaments, bought candies and sugar to give to the poor, and made each other visits as on great holidays. They looked upon their insane leader as the Saviour of the world, in which there should soon be new regulations; no one should die, and no one should have need to work or to care for the future, for God would care for them all. Most of them suffered from hallucinations of the sense of smell. The author came personally into contact with hundreds of these people, and states that eighty per cent. of them had sensory illusions. They perceived extremely agreeable odors, which they described as pertaining to God and heaven. They would smell of their hands and other objects in order to find out the origin of the aroma, which they ascribed to the Holy Ghost. Many had the feeling of remarkable bodily lightness, as if floating in the air. Some heard the voice of God, the whispering of the Holy Ghost, saw heaven open before them, and so on. Many were taken with convulsions, manifestly of an hysterical character. The congregations were always noisy and exalted, many falling to the earth, others jumping, striking themselves on the breast, shouting inarticulately, the women undressing themselves and becoming erotically excited. In some a peculiar form of verbigeration was observed. They would imitate a conversation, but it consisted of incomprehensible, senseless sounds, which they believed to be a language spoken by some people somewhere. In some cases there was complete analgesia during ecstatic conditions. Most of them were emaciated and anæmic. The epidemic was overcome by the authorities, who forbade the congregating of these people. Those who were most insane were shut up in asylums, and the hysterical persons were sent to hospitals and convents. Such as exhibited criminal tendencies were sent away. Exact statistics as to the numbers thus treated are wanting.

Miscellany.

The Treatment of Acute Gout.—The following is the substance of an editorial article that appeared in the *Union médicale* for December 9, 1893: Suppose a patient at the onset of his first attack of gout or of one of his early attacks; what is to be done? Perhaps it would be in consonance with sound practice to say to the patient, with Nothnagel: "Overcome pain by intellectual effort," or, simpler still, repeat to him Sydenham's maxim: "Patience and flannel." But this platonic sort of treatment would involve the risk of damaging both the physician and his patient at the same time, so something must be done and that quickly. The local treatment is easy. It consists in wrapping the diseased part in cotton and immobilizing it in an elevated posture. It may be treated by the application of an ointment of one part of cocaine hydrochloride to sixty parts of vaseline or oil of sweet almonds, or by painting it with a solution of from one to two parts of menthol in ten parts of alcohol, or by the application of a lotion of fifteen parts of menthol to a hundred and twenty parts of chloroform. Iodoformized collodion also has been recommended. The thing to do is to change the topical applications; this will occupy the patient's mind, and, moreover, what fails in one case succeeds in another, without anybody being able to say why. Internally, if the kidneys are sound, the great remedy is colchicum; in Lécorché's words, "it is *par excellence* the specific for gout, and it may and should be used in the treatment of this disease in the acute stage." The patient should never take colchicum without being closely watched by his physician, and it is well to warn him of the danger of poisoning to which he would expose himself by increasing the dose in order to shorten the period of his confinement. Sodium salicylate is never so good as colchicum, and sometimes it is very badly borne. There is no use in waiting for the tardy action of lithine in gout that is manifestly acute.

The internal treatment may be outlined as follows: 1. Slight purging every morning with saline waters. 2. To begin with, a moderately large dose of colchicum, then doses of two thirds the amount. The attack may be accompanied by high fever; in that case from five to eight grains of quinine sulphate may be given daily. If the pain is excessive, morphine may be given by subcutaneous injection. At the beginning of the attack, especially if there is fever, only very light food should be taken, and even complete abstinence may be indicated. The patient may be told to drink copiously of alkaline mineral waters, such as those of Vals and especially Contrexéville, and this will often prevent dysuria. When there is no longer any spontaneous pain, the patient should be kept at rest and told that premature exertion may bring on a fresh attack. Massage may be used, but without the slightest violence. It is important never to use local bloodletting, tincture of iodine, blisters, cold water upon the joints, or antipyrine internally.

The patient should be questioned minutely in regard to any indication of kidney disease; if he has any signs of gravel, if, *a fortiori*, he states that he urinates often, especially at night, that he gets up often to make water, etc., or if there is a large amount of albumin in the urine, evacuants, especially those that act on the kidneys, are contraindicated; then it will be well to prescribe, in addition to the local treatment: 1. An exclusive milk diet. 2. A drink made by boiling 150 grains of the dried flowers of *Vicia faba* and from 60 to 150 grains of sodium benzoate in a quart of milk, the whole of which is to be taken in the course of twenty-four hours. 3. The administration of four grains of quinine sulphate night and morning. 4. A saline purgative every morning. By so doing, says the writer naïvely, you may be benefiting your gouty patient more slowly, but at least you are sure of not poisoning him.

A Precaution in the Use of Cocaine as an Anæsthetic.—In a recent number of the *Centralblatt für Chirurgie* we find an abstract of an article by Dr. Gauthier, published in the *Gazette des hôpitaux*, on a means of preventing the unfavorable after-effects of cocaine when it is used as a local anæsthetic by injection. This consists in the addition of one drop of a one-per-cent. solution of nitroglycerin to the injection. The author goes on to say that nitroglycerin dilates the blood-vessels of the brain in the same way that amyl nitrite does; in the course of a few minutes after the injection of two or three drops of a one-per-cent. alcoholic solution the skin of the face is seen to grow red and hot, the conjunctiva becomes injected, and the patient complains that his head feels as if it were going to burst. M. Gauthier has taken advantage of this action, antagonistic to that of cocaine, for the last two years.

Lectures and Addresses.

THE SURGERY OF THE HAND.*

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My interest in the surgery of the hand was first stimulated in 1875, when, in assisting Dr. Weir in a resection of the wrist, I read Liston's enthusiastic and scientific article upon that subject, in which he spoke of the marvelous mechanical perfection of this particular joint.

No one can contemplate the perfect hand without wonderment and admiration, but, like the use of our eyes and ears, we think little about it unless its use is impaired.

Many of the surgical troubles that occur to the hand—fractures, sprains, etc.—have their counterpart elsewhere in the body, and we shall not consider these this evening. Nevertheless, there is great need of wider knowledge by general practitioners of the importance and gravity of such common troubles as poisoned cuts and pin pricks of the thumb and little finger, the suppurative inflammation from which spreads along the tendon sheaths to the common bursa of all the flexor tendons above and below the wrist. This causes permanent loss of usefulness of more hands than are destroyed by all other causes together. A bad result can only be prevented by quick use of the knife and antiseptics.

Of very great interest among hand troubles, of which I find a widespread ignorance among physicians, is one which has attracted my attention specially during the last twelve or fifteen years, and which is illustrated by some of the charts here displayed—namely, Dupuytren's contraction of the palmar fascia.

The general surgical aspect of the malady has received most careful consideration by Mr. William Adams, whose very large experience in this particular disease has rendered him the first authority upon the subject, and it is needless for me to more than refer to the second edition of his valuable work, issued last year, for most of the essential points upon it. There are some points, however, that have come within the scope of my experience on which my judgment differs somewhat from his, and to these I will direct especial attention.

In two previous articles written by me upon this subject, first in 1884 (see the *New York Medical Journal*, April 19th and 26th, and later in the *Medical Record*, March 3, 1888), I proposed a theory of its causation which was entirely at variance with the gouty theory generally accepted and since reiterated by Mr. Adams.

Reasoning from numerous cases of the neuroses and neuralgias which the patients with Dupuytren's contraction were often subject to, I satisfied my own mind, at least, that there was a strong probability that traumatism of the nerve ends in the palm, reflected to the central nervous system and thence to the opposite hand, would perfectly account for the course of events as seen in this class of cases.

Mr. Adams and Dr. Keen, of Philadelphia, have both lingered over the theory of its gouty origin, strongly impressed by certain phases of rheumatic development in the affected hands, and by the occasional hereditary tendency of the disease.

My own experience, based at that time upon about twenty-five private cases and fifteen additional public hospital cases, led me to discard the gouty theory because of the almost universal absence of gouty inheritance of the patients who came under my observation. It was not rare to find a history of rheumatism in the families of the patients, but extremely rare to find a case of typical gout.

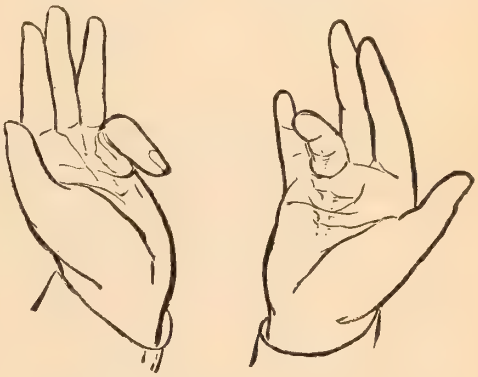

FIG. 1.

In both my papers I detailed many cases of striking neuralgias and neuroses incident to the course of the contracted fingers. It is curious to me that Mr. Adams is able to say that in the course of his experience in England he has never met with any such cases of painful neuralgias and neurotic affections extending to the shoulders and spine. He naïvely remarks that while I have "asserted that in English society gout is an almost universal legacy, and in America typical gout comparatively rare, but rheumatism more common," he "can not help thinking that distressingly painful neuralgias and various neurotic affections are more common in America than in England." My subsequent experience, based on an additional twenty-five cases in private practice during the last four years, into the histories of which I have been able to search, leads me further away than ever from the presumption of gouty origin. A few striking cases of neuralgias have occurred among these, but none so pronounced as several that are quoted in my first two papers. Several cases in my experience have resulted from distinct traumatism and scars.

I shall briefly recount a few typical cases to illustrate my position, and I shall be greatly surprised if the future experience of others having their attention called to these associated symptoms will not also reveal many that have been overlooked by them. Except for the typical gouty manifestations in the feet and hands, it is easy to say gout is the cause of many clinical symptoms and hard to prove it in these contracted finger cases. The trouble is certainly absolutely rebellious to antarthritic remedies, and does not come generally in gouty subjects. There is no exact analogy to this palmar contraction in gouty manifestations elsewhere. Tophi are never seen in these palmar contractions, no matter how long they may have existed.

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* The Wesley M. Carpenter lecture, delivered before the New York Academy of Medicine, November 20, 1893.

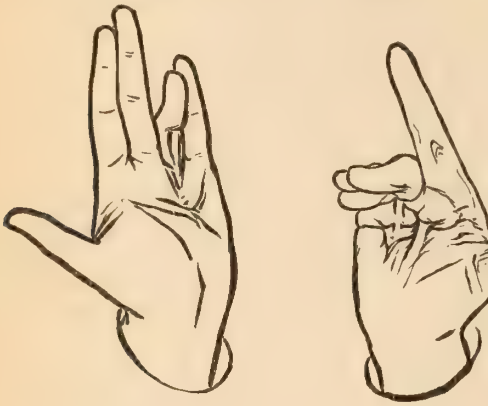

Fig. 2.

The theory of gout, so far as I can see, is purely an assumption. On the other hand, the disease affects a member whose tissues are highly endowed with nerve ends. It is associated with pure neuralgias. Its neuralgias are often relieved as if by magic by an operation on the bands. It prefers to attack the ring and little fingers, the most subject to bruises.

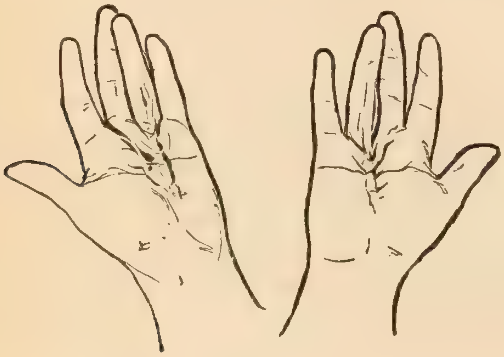

Fig. 3.

"The joints of these hands are generally in a healthy condition," says Mr. Adams. I myself have but once seen a truly gouty knuckle in these patients. The fact that many patients can refer the contracting band to injury and sometimes show scars is an argument in favor of this probable causation in all cases—*i. e.*, traumatism. Such cases as the following are not uncommon:

Ten years ago a patient was precipitated down an elevator, hanging on the chain for two stories. He did not experience any special bruise, except that the skin was slightly cut on the left hand and torn a little on the right. Three or four years later the ring finger in each was drawn down a little in the palm, the left soon touching it.

Several of my patients attributed their contractions to the driving of horses; others to boat-rowing and other injuries. One typical bruise may be illustrated as follows:

Mr. O., aged fifty-three years, a most intelligent observer of his family history, denies rheumatism or gout on either side among his ancestors, and is conversant with his family history for several generations back. Ten years before this trouble began he used the palm of his right hand, on the little-finger side, to knock up the lever of a heavy safe door, and has kept up the practice ever since. In two or three years the contraction began in the little finger of that hand, and it has progressed ever since. Dull aching was noticed in the morning at the seat of trouble. Two years later the knuckles of all his joints of the affected hand began to act as if subject to subacute rheumatism, and two years ago the left-hand knuckles of the corresponding fingers became red, swollen, and showed some disposition to ache. This phase of rheumatism, as pointed out and fully illustrated in my first paper, is a distinct neurosis.*

An interesting illustration of neurosis was shown by Mr. W., who had a sharp band developed in the middle finger ten years before. Some contraction had also developed in the left palm later. The patient emphasized a curious neurosis that had been present in the right arm most of the time, especially on awakening and for some time afterward—*i. e.*, a sense of great increase in size, as if the shoulder and arm were distended to twice their natural size, giving a strange and unnatural feeling; occasionally he has pain about the left shoulder. In 1885 I operated, dissecting out the band throughout the palm. There were three purplish nodular swellings along this cord. It was done under cocaine and painless. The finger came out perfectly straight. Two years and a half later the hand was absolutely free from contraction; the fingers could be even bent backward a little; the cicatrix was soft and white; he had had no pain for two years. The neurosis of his arm entirely disappeared. Moreover, the left-hand bands, that had not been operated on, became softened a little and gave no trouble.

A second case was of much interest. Dr. W., a distinguished physician of this city, with absolutely no inheritance of rheumatism or gout, attributes his contractions to the use of the rough head of a cane. His father also had had the same trouble. In his right hand, for fourteen years, he had a contracted ring finger, bending down well toward the palm. Recently he had suffered from brachial neuralgia and deltoid and cervical pains, like lumbago, on the affected side. His left hand began, seven years after the right, at the same point precisely. There was a burning sensation in the palm, and commencing neuralgia of his arm. The right hand showed bands running to the little and ring fingers; the left, bands, faintly outlined, going to the same fingers.

This illustrates the almost universal fact that both hands are very rarely affected at the same time; that one follows the other at an interval even of years, and that the corresponding fingers on the ulnar or radial side—usually the ulnar—take much the same position in both hands, as is well illustrated in Figs. 4 and 5. These points are an argument in favor of the reflex action of one hand through a corresponding nerve to the opposite hand.

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* Of other cases attributable to accidents I would mention that of Mr. P. K., who, climbing a ladder, had a spiked piece of frozen mortar clinging to a round pierce his palm over the ring finger. The callus never went away entirely. Typical Dupuytren contraction ensued. After two or three years progressive weakness of the ulnar fingers ensued, diminishing his grip and associated with writer's cramp.

In another, a civil engineer had a long series of stakes to put into the ground, and pressed them hard with his palm. Next day he had a sore palm, and dates his contraction from that.

I have seen but one case where Dupuytren contraction was secondary to neuritis.

A man of thirty-seven years had his forearm caught between two cars, so as to jam the elbow at one end and the palm at the other. Subsequently he had pain of ulnar and progressive partial paresis, with atrophy of the thenar eminence and development of true Dupuytren contraction of the fascia over the ring and little fingers, which I dissected out with much relief, but ulnar neuralgia with swollen nerve, easily felt at the elbow, continued as long as he was under observation.

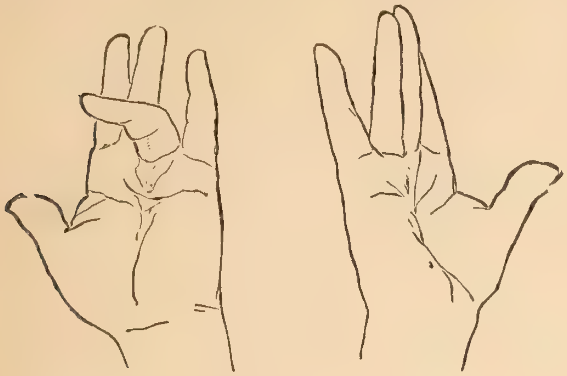

Fig. 4.

There was more or less swelling of the knuckles of both hands, resembling rheumatism. In 1889 I cut out the band in the right-hand finger, and made two transverse cuts to release the little finger. Six months later Dr. W. came to see about having the left hand cut, reporting that the operation on the right hand had been most satisfactory; that he had since had but little pain in the shoulder, and could put his arm forward without inducing pain. The left hand had been recently giving neuralgia of the ulnar side of the forearm and numbness of the little finger. Two years later he made the following graphic and convincing narrative of his pains which had been present at first:

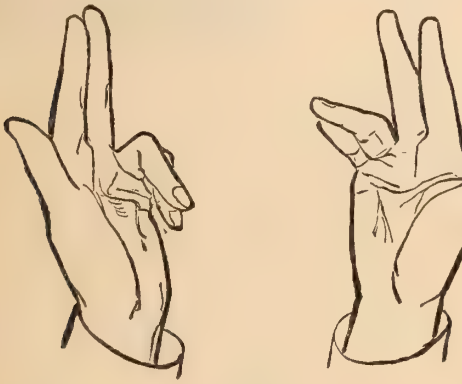

Fig. 5.

1. Has had no knuckle swelling or suggestion of rheumatism.
2. There has been no pain at all in the right hand.
3. The neuralgia and pain in the right cervical region have not returned.
4. Until lately there has been no pain whatever in the right shoulder.
5. The burning of the left palm disappeared after the operation on the right hand, and has never returned.
6. The pain that was slight but present in the left arm before two years ago, no operation having been done here, has increased so as to be unpleasant, resembling sciatic neuralgia, not limited to any muscle, but distributed in the back of the arm and the ulnar side of the forearm. The arm aches when raised to the horizontal, and has an unnatural feeling of heaviness.
7. Altogether, the left has been the bad arm this year, while before the operation on the right, that one was the chief seat of trouble.

I now operated upon the left hand, and there has since been absolutely no return of trouble. The right hand illustrated how well the excision method of operation had done on the ring finger. The cicatrix was fine and free from recontraction. The little finger on which crosscuts were employed recontracted somewhat.

A. B. was a car conductor, whose left index finger had drawn down into the palm and interfered seriously with his work. He attributed it to former hard plowing and hoeing. He had neuralgic rheumatism across the shoulders, so persistent that he got his coat on with difficulty. I made five transverse cuts and released the fingers perfectly. Two months later he reported himself absolutely well and free from pain, having worked since ten days after the operation.

In 1888 I operated on A. C., aged fifty-three years, for Dupuytren's contraction, which he attributed to a strain while turning a stopcock firmly some years before, when he heard a snap as if something was breaking in his palm. The palm puffed up, and then the swelling slowly disappeared, the palmar contraction following fifteen months afterward. The left showed a knot of contraction in identically the same place as the opposite. Pain had commenced eight months before I saw him—a deep-seated neuralgic pain which made him think he had rheumatism. After the operation his pain disappeared.

Regarding Methods of Operation. — Following Mr. Adams's urgent advice, the tendency has been to resort to the subcutaneous division of the bands at several points in the palm. This method was uniformly resorted to by me in the early years of my experience. Finding many recontractions, and believing that the absolute safety of good surgical work enabled one to cut out and get permanently rid of the offending band of diseased fascia, I have during the last few years resorted in most cases to excision. The results have been better than by subcutaneous division in my hands. The operative procedure is thorough, safe, and exact. It can be done painlessly and bloodlessly with cocaine anæsthesia combined with Esmarch's bandage, and leaves soft linear scars.

The relative merits of excision and subcutaneous division have been illustrated by some of my cases in whom both methods were tried; for instance:

A lawyer from Indiana, whom I saw in 1887, had his right middle finger drawn down for twelve years, and the left became involved five years later. Three years before I saw him he had had a cross-incision of the right-hand band in the palm which brought the fingers straight, and it was useful for a time, though it afterward required another operation. This time the subcutaneous incisions were made by an able surgeon. It soon began to draw down again when the splint was removed. Six months later the left hand was operated upon by subcutaneous incisions. Contraction had been progressive ever since these wounds were healed. I operated by linear extirpation of the right-hand band, not exposing the tendon or nerves. On the left hand the cicatricial and fascial contractions had matted the tissues of the palms. I made cross sections at seven points, making lozenge-shaped cuts when the finger was straightened. This left the finger free. The result was all that could be desired in both hands at the time. Three years later the left hand had undergone recontraction of the ring finger, which had been crosscut, while the right, where excision of the band had been made, was straight and supple.

This proved incontrovertibly to my mind the superiority of excision. I then excised the band that had reformed in the left hand, which had become more prominent, and was able to release the fingers perfectly. Two years later a perfect result was shown from both operations. Five years had thus elapsed without recontraction of the first excised bands.

A tumefied condition of the fascial band often precedes the contracted stage, and can be readily cut across by open incision, after which the wound melts away invariably, though in a year or two the band is apt to recontract through the scar.

This dissolving of the tumefied cord when severed is as if the nerve filaments being cut, the path of irritation is broken, and the products of inflammation are quickly absorbed.

I now give decided preference to the cutting out of contracted bands, which, though a somewhat delicate operation to do, is thorough and enduring in its results. Nowhere is the use of cocaine more satisfactory. Yet I have found, as has been observed also by others, that, from some yet unexplained cause, cocaine will occasionally yield very slight anæsthesia. I have seen this on two or three occasions only. A fine hypodermic needle must be used, and a two-per-cent. solution of cocaine. Not more than ten or twelve drops will be needed if properly placed in the derma at points one third of an inch apart along the proposed incision over the band. There will always be found a layer of fat between the tendon sheath and fascia. Interrupted fine silk sutures should adapt the cut edges exactly.

A narrow strip of cleansed gutta percha or protective is laid along the cut and small compresses of damp gauze laid an inch deep over this. Over all a square of thin gutta-percha tissue will keep the dressing damp and favor the drainage of the capillary oozing from the cut. A firm bandage should be applied before the Esmarch bandage is taken off.

The completed operation and dressing is done within twenty minutes, which I have found to be about the limit of time that most patients can comfortably bear a snug Esmarch bandage.

The first dressing should be changed in twenty-four hours. The second on the fourth day, when stitches may be removed.

Contrary to the custom of Mr. Adams, who puts on a straight splint at once, I have found it better to let the fingers assume a comfortably correct position, under a dressing without splint (which will often induce pain by overstretching), and I put on no splint until a week has gone by and the parts are healed.

Although I have records in my private note book of fifty cases of Dupuytren contraction, representing about that number of operations, I have never seen a case of suppuration after operation, although most of those of the last four years have been excised.

The paralytic and inflammatory deformities of the hand —so-called "*main en griff*e"—are to be carefully distinguished from Dupuytren contraction before operation, the tendons in such cases being contracted but buried in the flat palm and not raised like the bands of the latter.

Contractions simulating Dupuytren's.—Twice I have seen children with the little and ring fingers of each hand drawn down to the palm, looking like a Dupuytren's contraction, but purely of reflex origin. One case, seen five years ago, has lately been reported by the child's father as almost entirely straightened with time.

Another quite frequent deformity resembling a Dupuytren's contraction is seen in the little finger curved by reason of a congenitally short skin on its palmar side preventing its being straightened out as its neighbors. On manipulating it, one readily feels that there is no band under the skin.

I have seen one such finger with a double twist giving it a spiral curve toward its neighbor.

The palm is occasionally traversed by bands of congenitally short skin underlaid by somewhat limiting bands —not, however, of palmar fascia. This is well illustrated by the annexed Fig. 6, showing the hand of a young lady whose piano playing was limited by inability to stretch the fingers far enough. This was greatly improved by several subcutaneous cuts.

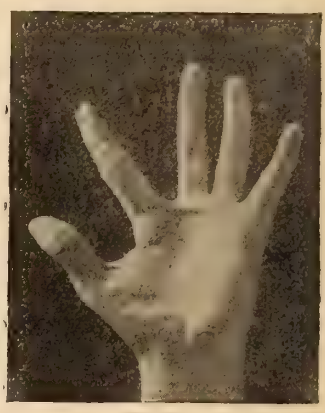
Fig. 6.

To completely remedy these defects is not possible, but much may be done toward that end by cross-cuts of the short skin, allowing the lozenge-shaped gaps to granulate and be stretched later. This I have done in several cases and acquired a soft scar.

Neuroses of the Hand.—These belong mostly to the province of the neurologist, but some, being of surgical interest, may be mentioned:

An intelligent lady of forty-five years ran a threaded needle, head first, into the middle of her middle finger on its palmar side. She experienced not much pain, but an entirely disproportionate shock to her nervous system. She was bewildered and could not collect her thoughts for a few minutes. The needle being tightly stuck in, she had to use force and pulled it with her teeth. She observed a stringy fiber came with it, which her doctor said was a nerve. She walked home an hour later, but was overcome by bewildered feelings. She lost her memory and found herself leaning against a house some distance away.

Her nervousness continued, and on the second night she awoke like a mad person with intense pain and a swollen finger. Suppuration, erysipelas, and pyæmia followed. One night she awoke with aphasia and left hemiplegia, and did not recover speech for six weeks.

When convalescing she had spasmodic contraction of the face, arms, and legs during dressing of the hand. The healthy side became hyperæsthetic. It was three months from the accident before she began to walk. She still mixed her words, and when I saw her two years later she was in an overwrought nervous state with a hand unfit for manual work. Memory, which had always been good before the accident, was still capricious. For example, she would forget in ten minutes all I had asked and said to her, but a week later it would recur clearly to her. She used wrong words and was not at the time conscious of it, but in half a minute realized she had spoken falsely.

When she began to speak after her sudden aphasia she had to learn over again the use of most words and the meaning of many. She still mixed up words in a sentence.

Such is the history of a striking case of shock to the central nervous system from a slight nerve injury of the hand.

A boy was brought to me with the ring and middle fingers of his hand half closed into his palm. There was no Dupuytren contraction of the fascia. He had been playing at jumping over posts some years before and bent down the middle fingers, straining the knuckles, which enlarged, with subsequently some rigidity. Later the same pain and stiffness were reflected to the opposite hand with occasional neuralgia of the shoulders. He had flexor cramps when gripping a hammer, hoe, or rake.

Several cases narrated further on represent also neuroses from traumatisms.

Incidentally one may meet these conditions with hammer palsy, artisan's cramp, or musician's cramps, many of which I have seen. Among them, one more striking than another is that of a young lady, a violinist, who, being in perfect health, was assigned by her teacher to play a concerto in public. Time being limited, she practiced one staccato movement, which was new to her, for two hours in succession, at the end of which time she broke down completely. Her hand was useless. There was complete muscular or nerve exhaustion. She was unable to write or use her violin. Later she had insufficiency of the eye muscles, requiring prisms, and flat foot, requiring her to use crutches and have a metal arch put into her shoe.

Seven years have passed and she has never regained nervous force enough to control her violin bow, or to write more than ten minutes without her hand giving out.

These few illustrative cases, chosen from many, suffice to show the intimate relation between many cases of hand troubles involving nerve ends and widespread disturbances of the system.

Tumors.—Of more special surgical interest are tumors of the hand and fingers, of which from many I will narrate three or four of special interest. It is in the hand that the smallest tumors are often the most troublesome, because conspicuous. I have notes of one little tumor as large as a small pea on the end of the thumb in a woman who had been prevented from sewing by it, owing to pain on pressure with further pain in the arm. It was in and below the deep layer of the derma, and on being dissected out proved to be a purplish-looking spindle-celled sarcoma, denominated by Paget painful subcutaneous sarcoma. A second and larger one in another patient grew in the center of the palm.

I have had four such tumors of the hand—two above the wrist—so painful on being struck that they caused the hand to drop anything that the patient might be carrying.

One which I dissected out ten years ago was a typical sarcoma, and had not recurred at the end of eight years. Nor have the others returned as far as I know. Another tumor at the base of the index was as large as a walnut, was soft enough to give a striking sense of fluctuation, but proved to be a pure fibroma with soft stroma.

In the palm one occasionally sees small hernias of the sheaths of the tendons buried in the fat of the palm, little cysts filled with transparent jelly and with very small connection with the sheath. These are like weeping sinews, so common on the back of the wrist, but can not be dissipated by a blow. I have seen them disappear without treatment, but this is so rare that one should dissect them out if they give trouble. Such a one I recently dissected out from the fat of the palm at the root of the ring finger, where it had given annoyance.

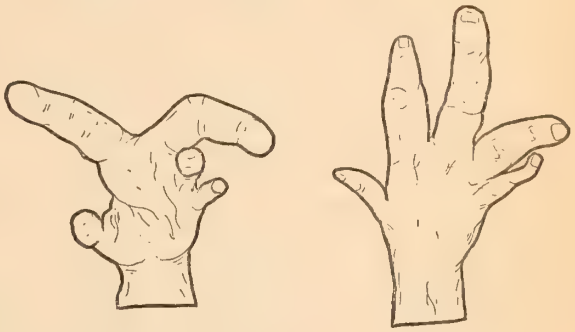

FIG. 7.

Hypertrophy of the Fingers.—Hypertrophy of the knuckles, very well described in Tillmann's *Surgery* (Leipsic, 1892), is an epiphysial hyperostosis, with elongation as well as broadening of the bones of some of the fingers. Others on the same hand often remain normal. The drawings (Fig. 7) are taken from a photograph of a lad sent to me from a physician in Maine. The great toe and the second toe showed the same extraordinary enlargement.

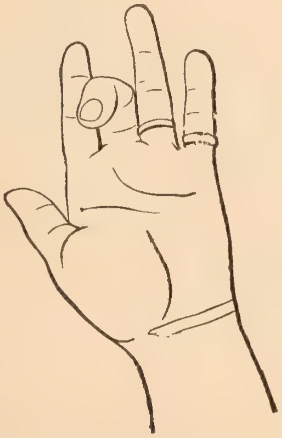

FIG. 8.

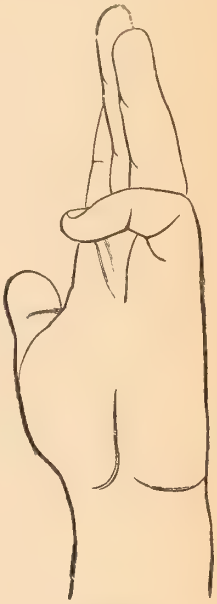

FIG. 9.

Trigger Finger.—I fancy it may be such a growth that causes the curious trouble denominated (trigger) "snap-finger," of which I reported five cases, with illustrations, some years since (see Figs. 8, 9, 10, and 11, here published by permission of the *Medical News*, in which they originally appeared). The patient closes all his fingers in the palm, and on opening them finds that one will stay shut and can only be opened by using the other hand to effect it, when it flies open like a knife-blade with a snap.

It is said to be due to a tumefied condition of a point of the tendon, making a bulbous enlargement that catches under the ligament at the base of the finger. One such case is reported as being capable of dissection and relief. In my cases there was no perceptible swelling and all recovered after a few months, part of which time they were kept on a little wood splint with pad pressure, which prevented friction and irritation.

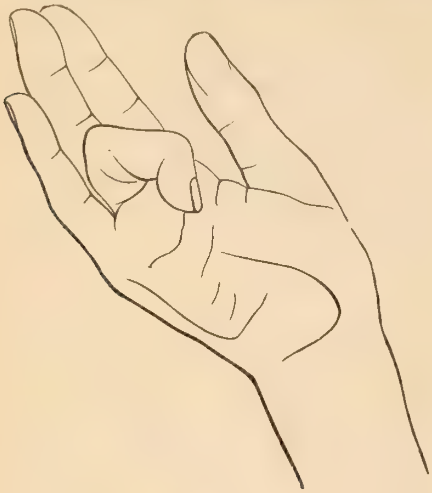
Fig. 10.

Of particular importance I will mention two deformities of the end joint of the fingers, happening from slight accident, which need the earliest surgical care and admit of most particular work.

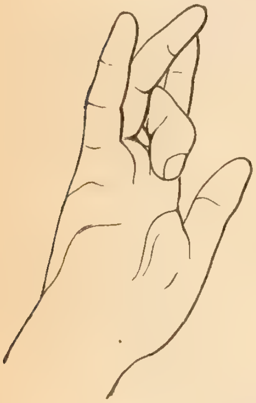
Fig. 11.

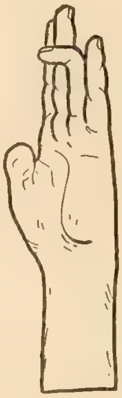
Fig. 12.

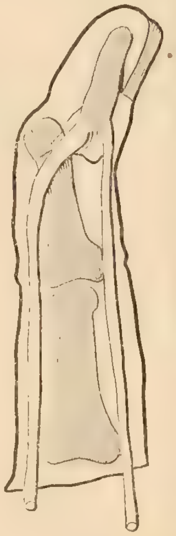
Fig. 13.

Drop Finger.—Two cases illustrate what I would call "drop finger." Both happened from apparently insignificant causes:

In one, a lady was taking off a stocking, and pushing it down the side of her leg with the tips of her fingers, suddenly found the end joint of her ring finger had given way and hung at right angles to the finger, powerless. With her other hand she could straighten it, but was unable to support it. It appeared to have nothing but skin over the joint to hold it up. The extensor tendon, where it thins out disproportionally to its size above, had torn away from its delicate attachment to the base of the last joint.

In a fortnight the joint became red and tender; a sharp, shooting pain extended from the knuckle to the wrist, forearm, arm, shoulder, and back of the neck. It was often severe enough to make her wholly sick.

She volunteered the statement that a fortnight after the accident the same joint of the other hand pained her when using it. This pain lingered six months after, when I first saw her. The injured hand was quite disabled on that account. It was tender if touched, ached if used, and if struck by mishap it "made her sick all over."

It was now impossible to straighten it on account of the inflammatory sealing up of the torn capsule. I therefore resected the joint and made a solid, straight, and useful finger. When it was healed she was free from pain. I have to-day seen her, more than five years since operation, and she has not since had pain and uses the finger as if it were never hurt.

The second case in which I operated was on a prominent architect, whose ring finger dropped useless at the last joint from the slight pressure of his finger tips pushing across a paper from off which he was brushing some crumbs.

I operated two weeks later, when his physician found himself unable to keep the joint straight, even using a splint. Through a linear cut on the back of the knuckle I sutured the torn end of the tendon to the periosteum of the base of the last joint. The result four years after has been most admirable.

Baseball Finger.—The reverse deformity to the above is now very commonly seen in baseball players. The last joint is violently dislocated backward and can not be replaced, on account of the flexor tendons wrapping themselves round the head of the proximal bone of the joint, which also slips out through a buttonhole of the capsule. This accident makes a permanent bayonet deformity. It is very apt to be compounded by laceration of the skin at the flexure crease. In three such cases I have been able to restore the parts perfectly through incision, though in one I had to resect the head of the bone and make a stiff joint.

Burn Scars.—Some of the worst deformities of the hand one ever sees are produced by burns. These have heretofore been the *bête noire* of the surgeon. Now it is possible, thanks to Professor Thiersch, to restore many of the worst cases to usefulness by skin grafting.

I will mention only a few of the bad cases I have had.

Two almost similar in deformity were produced in girls working in laundries where ironing mangles were used, the upper cylinder of which is kept hot.

Their hands, being drawn under the roller, were burned to the bone from the knuckles to the wrist, and the resulting slough, including tendons, left a scar which drew the hand directly back upon the wrist.

Dissecting out such massive scars, one brings the fingers as nearly straight as possible and makes Thiersch grafts over the parts exposed. Two such cases are illustrated on the charts.

A unique accident brought a young man to me with broad ulcerated surfaces around each wrist, threatening him with ultimate loss of wrist action. He had been cleaning a pair of gloves with benzene and had on celluloid cuffs. The former ignited and set fire to his cuffs, which burned like tinder. He made frantic efforts to get them off, but they were stiff and only burned him worse for handling, so that they practically burned themselves off *in situ.*

I planted Thiersch grafts on both wrists with the happiest result. All scars were perfectly supple six months afterward.

Indeed, I may say that these grafts do not show the contracting tendency that the scar tissue does, and are adapted to burn cicatrices perfectly. Indeed, I have covered the entire arm from the back of the hand to above the elbow with them, and had fine supple skin three years after.

Webbed Fingers.—There is one finger deformity to which this method, therefore, specially applies—namely, webbed fingers. All that is needful is to split the web and dissect out any tough part well down between the fingers, then put a long strip of Thiersch graft up one side and down the other, retaining it by gutta-percha tissue at the flexion.

Such a case of all the fingers I put up in a permanent dressing at the time of operation and removed at three weeks, to find the parts perfectly healed.

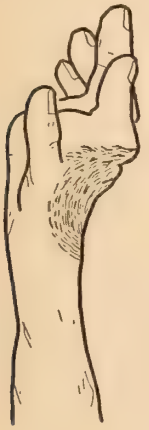

Fig. 14.

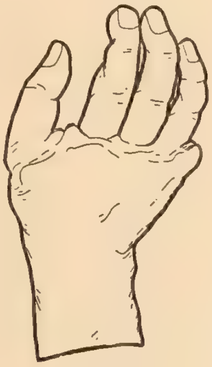

Fig. 15.

Conservative Surgery.—I will not weary you with enumerating further the many hand troubles which always elicit the surgeon's pity as well as skill, but will venture afield into a novel inquiry that has occupied some of my thoughts of late.

Last spring a well-to-do man from the West was sent to me with both hands gone above the wrists. A dynamite cartridge, with which he had been expecting to do some fishing by a method of which the law takes cognizance in some States, had exploded in his hands and amputation had been required. With Western energy he had come East to see if there was not some one who could graft a new hand upon his arm. He said he was sure he could persuade the Territorial Governor to release a convict who would sacrifice a hand for remuneration, which he himself was ready to pay. I could but smile at the Munchausen tale such a deed would make, and took his address, promising, if ever it became possible, I would communicate with him.

Not long after a man came to me from New Jersey who had had a buzz saw plow through his hand from the back, severing all the fingers and the thumb through their metacarpal knuckles, cutting obliquely toward the wrist, and leaving the hand hanging by the skin at the line of the palmar arch. Every tendon—both extensors and flexors, except the flexor of the thumb—was cut across.

It seemed inevitable the parts must be sacrificed, but I decided to see how much could be done, and spent three hours and a half trimming the torn tendons and muscles, resecting the disrupted joints, and suturing the whole. I can hardly believe that the skin and some soft parts alone nourished the fingers, but that one or more of the digital arteries were probably spared, though I did not discover them.

The little finger was the only one that became gangrenous, the thumb and three fingers showing good vitality.

I saw the man a few days since after six months. He now uses his hand for all work, and has a little flexion of the fingers and slight independent flexion of the end joints. The thumb grasps tightly against all the fingers and he writes almost as well as ever.

In view of the fact that surgeons have replaced a finger, an end of a nose, and small parts of flesh under favorable conditions, I asked myself *why not* a major part, such as a hand or a leg? Is it our inability to nourish the part, or to innervate it, or to unite tendons, muscles, or bone? The latter surely gives no trouble. Tendons are sutured every day, and under favorable circumstances their function is restored. Nerves are frequently sutured and functional restoration is often recorded.

Is it impossible to restore an arterial supply once cut off? Veins are frequently cut and sutured, and perform perfectly afterward. Is there no way to restore an artery?

The question seems to narrow itself down to nourishing a limb in order to restore it.

Experiments.—During the summer I made a few experiments at the Carnegie Laboratory, with the assistance of Dr. Theodore Dunham, and through the kindness of Professor E. K. Dunham.

To see whether a thin glass tube would be tolerated in a sterilized state within an artery, I made a number of half-inch pieces to suit the caliber of a dog's femoral, constricted them very slightly to an hour-glass shape, and smoothed their ends by heat, so that no surface roughness should induce clotting. Cutting the femorals across, I tied each end over the tube by a fine silk thread, and tied the thread ends together. Primary union resulted, and the dog's legs are as good as ever.

I feared, however, that the artery might have become blocked in this case, and the collateral circulation had nourished the limb. I therefore cut one out to see, and tied the femoral above and below. The tube was free in a dilated end of the artery, and slow endarteritis had sealed it below. Whether this would necessarily occur I decided to see by putting a tube in the aorta, where it seems as if collateral circulation could not save the limbs. I chose a cat, whose abdomen I opened and whose aorta I cut across, clamping lightly above and below. Into this I tied an inch of very thin glass tube sterilized by boiling, and filled with water just before inserting into the lower end, so as not to have air emboli. The cat made a perfect recovery, and after four months I show you him to-night, fat and strong, with a glass tube in his aorta.

I afterward tried the same experiment on a large sheep, whose aorta is thicker-walled and larger. Unfortunately, I clamped the aorta so tightly by a broad pedicle clamp that I crushed the inner wall, and at autopsy, two days afterward, the site of clamping was blocked by adhesive clot.

Two days ago Dr. Dunham and Dr. Cushman repeated the experiment on a large dog, and he has thus far been well.

Four months ago I added one step more to the experiments. I dissected out the brachial artery and vein near the axilla of a dog's fore limb, and, holding these apart, amputated the limb through the shoulder muscles and sawed through the bone, leaving the limb attached only by the vessels. I then sutured the bone with a silver wire and the nerves with fine silk. Each muscle I sutured by itself with catgut, making a separate series of continuous suturing of the fascia lata and skin.

The leg was then enveloped in sterilized dressing, a liberal use of iodoform gauze being the essential part. Over all, cotton and a plaster jacket were placed, leaving him three legs to walk on. A small drain of the axilla was removed at the first dressing and a permanent dressing applied, which remained two months. The dog's leg united perfectly, and he is here to show how well he can use it.

Thus we see that, if in an amputated limb an artery can be left, the limb will survive the division of everything else. And, further, it may be asserted that, if an arterial supply can be restored to a completely amputated limb, *that* limb also may be grafted back to its original or a corresponding stump.

Up to the present I do not feel that we have incontrovertibly proved that arterial continuity can be restored by a glass tube in all cases. But it is not impossible that, if slow proliferating endarteritis shuts up the main artery in a few weeks, the anastomosis through the soft cicatrix of vascular muscle and skin may be able, by the recuperative power of Nature, to take up the nutrition and ultimately carry it on.

The final experiment of the series which I set out to make—namely, the complete amputation of an animal's limb and its restoration—requires preparation, assistance, and time, so that I have not been able to complete it within the period preceding the time appointed to read this paper. I shall therefore report at another date to the Academy such facts as may be further developed.

Some one may ask, 'Where is the supply of limbs to come from should it ever be possible to graft a leg or an arm? I may say that I doubt not that a limb crushed, let us say, at the thigh or shoulder, requiring amputation, would admit of Esmarch's bandage being applied to expel its blood and of being used after amputation. It should be just as viable as any limb which we keep bloodless for hours under Esmarch's bandage, and have no trouble with when blood is let into it. Why not another man's blood as well as its owner's?

I do not expect that this vision of surgical possibilities will be realized soon, nor do I think enoughhas been proved to warrant much hope, but I feel that experiment in that direction will yield much surgical instruction.

The tolerance of sterilized glass tubes in the larger arteries admits of further application than has been hinted at in this paper.

Original Communications.

A CONTRIBUTION TO THE ARRANGEMENT AND FUNCTIONS OF THE CELLS OF THE CERVICAL SPINAL CORD,

TO WHICH IS APPENDED A NOTE ON CENTRAL CHANGES SECONDARY TO LONG-CONTINUED DISUSE OF AN EXTREMITY.[*]

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Within the past decade the science of medicine has made most remarkable progress. The forward strides during these ten years compare favorably with the progress made in all the fifty years previous. It is in two branches of medicine that we see the manifestations of this advance most clearly—in surgery and in neurology, both, of course, including pathology. Neurology, indeed, has become so perfected that it is rapidly taking a position which will entitle it to rank as one of the divisions of the Æsculapian art most deserving the name of science in its stricter sense. No one can observe the remarkable localizations of lesions in the central nervous system, or the exactness of diagnosis made by logical inference based on accurate knowledge obtained by careful examination, without bearing witness to the truth of these statements. Heretofore that part of the nervous system contained within the skull has claimed the larger portion of the investigator's attention, because the results obtained in this line were often more tangible and striking. More recently, however, work directed toward the accurate localization of the functions of the spinal cord has been done and with encouraging results. Although, perhaps, surgery will never give so extensive and important aid in injury and disease of the spinal cord as it does to-day in similar conditions of the brain, there is every reason to believe that as progress is made in knowledge of the functions of each segment of the cord, so in proportion will there be an extension of the field of usefulness for surgery in injury and disease of the cord. For instance, if, after an injury which has resulted in fracture of one of the spinal vertebræ or infection that has resulted in abscess of a small portion of the spinal cord, we find that there is a loss of function of certain parts that points unerringly to a certain definite locality in the cord, our best efforts can be intelligently given to remove the *materies morbi*. But this can be done only when our knowledge concerning the localization of functions is accurate.

The functions of the spinal cord are in the main two in number—viz., reflex action and conduction. The function of automatic action formerly attributed to it can not as such be maintained, the actions that were designated as automatic being simply co-ordinated reflexes purposive in character. These two functions—reflection and conduc-

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[*] An essay for which was awarded the Cash Prize of the Medical Society of the County of New York for the year 1893, embodying work done in Professor Charles L. Dana's neuropathological laboratory at the New York Post-graduate Medical School.

tion—are all-important; but in so far as they assist us in obtaining knowledge of localization, the former is deserving of our best attention, for any given reflex is performed definitely at a certain level and in a certain segment and must have certain cells that are concerned with this function alone, and therefore an effort can be made to localize them precisely. On the other hand, conduction is carried on by the numerous bundles of the white matter. The arrangement of the cells in the spinal cord and the functions and connections of cell groups is still somewhat *sub judice.* Our knowledge of the white matter, the conducting columns, both as regards their development and functions, is more satisfactory. Information concerning the former is to be obtained by anatomical investigation, by the results of experimentation, and by the observation of pathological changes. The study of each one of these is important, and information obtained by one method should be sustained and corroborated by the others. It is the object of this contribution to assist in demonstrating the functions and groupings of the ganglionic cells in the cervical portion of the cord. The satisfaction of knowing definitely the functions of the cell columns in the spinal cord can not be overestimated. It not only leads to commendable refinement in diagnosis, but it gives a clearer insight to prognosis.

The work has been done in the following way: A study of the spinal cord has been made from both the adult and fœtal subject. The information derived from this study, contrasted with and aided by the labors of others who have worked along these lines, is given in regard to the normal grouping of the cells. Then some studies have been made of the cord of the rabbit and the white mouse, and the results from these studies have been used as corroborative evidence concerning the functions of certain groups of cells. Last and most important, the body of the work is taken up with the examination of a spinal cord which presented some striking pathological changes. Some time ago, through Dr. Charles L. Dana's kindness, the opportunity came to me to examine the spinal cord of a young man who had suffered while a child from acute anterior poliomyelitis. Recovery after this disease was complete, except that the right upper extremity remained powerless, stunted, and useless. The history of the case will be considered in detail later on.

The spinal cord is usually described as made up of a number of segments superimposed one upon the other. Each one of these segments corresponds to the exit and entrance of a root nerve. In animals high in the scale of life and in man this segmental nature is not so clearly apparent, but it can be made out. The cervical cord, then, is made up of eight segments, each one of which possesses a certain individuality, and yet is but a single element in a unity. The white columns, externally, are directly continuous from one segment to another. Internally, in the gray matter, are found groups of cells which, appearing in the same relative position throughout many segments, may likewise be said to be continuous from one segment to another. In making a study of the cervical cord from serial sections, it is seen that the shape of the gray matter varies greatly in the different segments, not only the gray matter of the anterior horns, but also, though to a lesser extent, that of the posterior horns. This variation in shape and outline is due to the varying number of cells at different levels in the gray matter. A glance at the following table, given by Kaiser, shows this clearly:

Absolute Number of Anterior Horn Cells.

IV. Cervical segment	28,440
V. Cervical segment	64,230
VI. Cervical segment	44,560
VII. Cervical segment	36,850
VIII. Cervical segment	47,970
I. Dorsal segment	27,600
Total	249,650

Average total of cells from which the brachial plexus takes its origin, 250,000.

Thus it is seen that there is a remarkable difference in the number of anterior horn cells of the fourth and fifth cervical segments, and we should therefore expect to find a marked difference in the shape of the anterior cornua. A glance at the inclosed outline of the gray matter at the level of the fourth and of the fifth segments (Fig. 1), respectively, will show this difference clearly. At the fourth segment the anterior gray matter is the shape of the thumb—that is, it has nearly the same breadth and configuration throughout except at the extreme anterior, where it tapers somewhat to an apex mesially. At the fifth segment the gray matter is very much enlarged laterally and is somewhat quadrilateral in shape, its surface area being nearly or quite twice as great as in the segment above. This is not surprising when we keep in mind that the number of cells in the fifth segment is more than twice the number in the fourth.

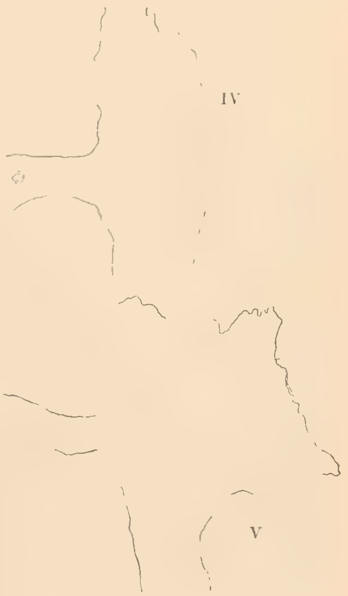

Fig. 1.

The cells of the spinal cord, with the exception of the neuroglia cells, are arranged in two ways—the scattered and the grouped. The scattered cells are found in varying numbers throughout the cord. In the cervical region they are more clearly apparent in the lower segments than the upper. The grouped cells are not so distinct in the cervical portion of the cord as they are in either the dorsal or lumbar portion, but still they are grouped with considerable distinctness. The cells of the cervical cord are for the most part large, polygonal, and have many prolongations, the principal one of which, or neuron, becomes continuous with an anterior-root nerve fiber. Here and there in various sections from different segments are seen large, oval, bipolar cells situated near the junction of the posterior and internal gray matter. These cells in the cervical cord are known as the nucleus of Stilling, while in the dorsal region, where they are extremely prominent, they make up what is known as Clarke's or the posterior vesicular column. Their average size is about 24 μ wide and 42 μ long. They receive a certain number of the collaterals (Ramon y Cajal) of the posterior root nerves—that is, lateral branches of the longitudinal fibers of certain columns of the spinal cord (Kölliker), and they terminate in a network forming a delicate felted arrangement encircling the nerve cells. The neuroglia cells consist of elements of the original medullary plates, first appearing as epithelium of the central canal, and are found only in deeper parts of the cord (Turner).

The arrangement or grouping of the motor cells differs in different segments of the cervical cord. It has been customary to refer to the groups of cells in this portion of the cord, according to their position, in a general way, as follows: (1) A mesial group, (2) a latero-ventral group, (3) a latero-dorsal group, and (4) a middle group almost in the center of the anterior horn. From any other than a topographical standpoint such designation and classification is useless.

In the upper cervical region above the exit of the first cervical nerve, where the crossing of the pyramidal bundles is still not entirely completed, there can be seen two groups of cells—one internal toward the column of Türck, the others more external. The internal, if followed upward, becomes the nucleus of the twelfth nerve, and the other becomes the nucleus of the eleventh cranial nerve in the medulla (Kaiser). In addition to these two groups there are scattered cells, principally dorsad to these, and varying in number in different segments. These scattered cells are polygonal, multipolar, and, as a rule, rather smaller than the other cells of the anterior horn. At the level of the upper part of the second cervical segment there can be clearly distinguished: 1. A group ventrad toward the apex of the anterior horn and internal. These cells are moderately large, multipolar, and are possessed of neurons, dendrons, and possibly neuro-dendrons, their neurons being clearly traceable into the anterior nerves. 2. Dorsad to this group and external toward the mixed lateral column, but still anterior, lie a considerable number of cells which are continuous with the external group of cells above mentioned. These cells make up a group known as the accessorius group. This group of cells extends as far as the sixth cervical segment, has nothing in common with the other lateral cells, and is concerned in giving origin to the spinal accessory nerve (Kaiser). 3. At the junction of the middle and posterior horns are many small cells arranged in one or more small groups. 4. Internal to this last group and somewhat more ventrad are seen a varying number of bipolar cells; in many sections they are entirely absent. They are the cells of Stilling's nucleus, the functions of which have before been mentioned. 5. Laterally at the outer border of the gray matter, where the ramification outward of the gray matter occurs to form the reticular substance, lie the small cells making up the group that is by common consent known as the lateral horn cells of Waldeyer. 6. The few cells at the base of the posterior horns and the scattered cells found in varying numbers between the above-mentioned groups make up the cell arrangement at this level.

The group of cells (1) is remarkable in the persistence of its relative position. In each succeeding segment as we go downward we see it occupying a relatively unchanged position throughout the cord, not alone in the cervical portion, but in the entire cord. In the lower lumbar cord it becomes less marked. Starr, in his article on Localization of the Functions of the Spinal Cord, says: "The group of cells in one segment may be continuous with those in an adjoining segment. No one group, however, can be considered as a continuous column throughout the entire cord." Again he says: "In the anterior horns in which the cells are most numerous a single group rarely extends through more than three segments." With the continuity of this anterior group of cells so strikingly apparent, this statement by Starr is at variance. This group of cells in its position is not in sympathy with the exit of any certain plexus of nerve roots, nor is it limited to any given area corresponding to the origin of innervation of any certain group of muscles such as the respiratory. In the lower animals of the quadruped variety it is particularly well developed, and especially in such as the rabbit and cat, that make use of their dorsal muscles to a great extent. The conclusion would seemingly follow, therefore, that these nerve cells were concerned in giving origin to the nerves innervating the muscles of the back. One is led decidedly to this conclusion not only by the arguments advanced above, but by the consideration that this group of cells is the only conceivable origin of such nerves. It is proposed, therefore, by Kaiser, for the sake of clearness and to avoid confounding this group with other groups in the anterior cornua, to refer to this group as the nucleus for the dorsal or back muscles instead of the medial group. In this article it is proposed to follow that suggestion. Passing to the third segment, the above description of the cell arrangement follows with some modifications. The most important change noticed at this level is the interposition of a small group of very large polygonal cells between the nucleus for the dorsal muscles and the accessorius nucleus. This group, which has been particularly studied by Dees, extends down to the fifth cervical segment. As we pass from the third segment to the fourth and then on to the fifth, examining the sections *seriatim*, we notice that this group of cells approaches more nearly the periphery anteriorly. After passing the fifth segment the cells are no longer seen as a group. The size of the cell groups and the number of cells making it up differ at different levels and in different segments. The dorsal muscle column remains about the same size throughout the cervical cord with the exception to be noted presently. The accessorius nucleus or column reaches its best development in the third cervical segment. The anterior group is, as has previously been stated, best developed at the fourth cervical segment. At the fourth cervical segment, however, the cell group that strikes us most forcibly on account of its remarkable development in size, and particularly in the number of median cells, is the nucleus for the back muscles. The cells push their way centrally in the gray matter, and at this level are about twice as numerous as in the segment above or below. The group of cells previously spoken of as situated between the accessorious nucleus and the nucleus for the muscles of the back and near the anterior periphery of the gray matter is in all probability the origin of the phrenic nerve. It corresponds in its location exactly to the position to which the phrenic nerve can be traced, and although it is difficult to get experimental evidence corroborative of the functions of this nucleus, there can scarcely be any doubt that its function is as just stated.

As we pass in our study of serial sections from the fourth to the fifth segment, we notice that in the second of these two segments a greater number of cells make their appearance laterally in the gray matter. At first these cells are situated considerably ventrad to where we first saw, and can see even yet, the small lateral-horn cells. To locate them quite accurately we might say that they first appear on a level with the anterior border of the commissura alba if we imagine the commissure extending out laterally in a straight line. At first the cells of this group are few in number and do not attract much attention, but as we pass into the fifth cervical segment a most striking change takes place. The outer lateral margins of the gray matter, which at this level, as has been said previously, is enormously developed, seems to be quite thickly studded with large multipolar cells. As they are carefully studied in different sections made from this level, it will be seen that they arrange themselves with considerable accuracy into three groups. One group is situated anteriorly and near the periphery—that is, at a place corresponding to that stated above as the place where the cells of this group first make their appearance. A second group lies posteriorly some little distance from the periphery, where the gray matter juts out toward the crossed pyramidal tracts. And a third is situated on a level between the two but internally—that is, just dorsad to the center of the anterior gray matter. These groups of cells continue prominently throughout the seventh cervical segment, are clearly marked in the eighth, and begin to lose their striking individuality in the first dorsal segment and terminate at its lowest level. The first group of cells of this lateral nucleus to show signs of disappearance as we go downward in the cord is the anterior, next comes the posterior, and last of all the internal. It will be noticed that this remarkable collection of nerve cells extends from the fourth cervical segment to the bottom of the first dorsal. This, as is well known, is the area from which arise the nerves that enter into the formation of the brachial plexus. That these nerve roots arise from this area has been shown by many anatomists, but by none more clearly than by Krause, who, by the use of a fluid composed of sulphuric acid, glycerin, and water, which corroded and removed the interstitial tissue of the nerves and so left the nerve bundles themselves, traced the bundles to this locality in the spinal cord. Then, again, one of the most important functions of the cell columns of the cervical cord is to furnish origin for the nerves of the brachial plexus; and if we consider for a moment the functions that have been assigned the other groups of ganglionic cells, we see that these lateral groups of cells are the only ones that can be assigned this important function. In order to avoid confusion and ambiguity in the use of terms, Kaiser has proposed, in the light of our recent knowledge concerning the function of these groups of cells, that the term "upper extremity group" be substituted for the name of lateral group, by which they are commonly known. This suggestion will be followed in this article, for, as will be seen farther on, the results obtained by a study of the pathological changes in the spinal cord of the case, the history of which constitutes the second part of this article, are entirely and strikingly corroborative of Kaiser's statement.

With a word concerning the medial and lateral horn cells found below the fifth cervical segment, we may consider that the foregoing statements embody the knowledge of the ganglionic cells that we are in possession of to-day. The median cells, when we get to the level that has just been mentioned, are situated on a level dorsad to the gray commissure and nearer the middle of the gray matter. These cells are small, relatively few in number, and from this level downward are scattered through the base of the posterior portion of the gray matter. As we pass from the last cervical segment to the first dorsal, and particularly in the lower part of the latter, the conspicuous cells of Clarke's column situated at the base of the posterior root come prominently into view. Taking it for granted that the above represents our knowledge of the grouping of the ganglionic cells in the cervical cord, we will now, by a careful study of the following case, see how far the results obtained are corroborative of the functions that have been imputed to the different cell groups or columns.

A. F., twenty-five years old, born in England, admitted to Bellevue Hospital in the service of Dr. C. L. Dana, October 3, 1893. Family history, so far as could be made out, was negative. When two years old he had an illness which was followed by paralysis of the extremities. The right side was affected more severely than the left. The paralysis gradually passed away, leaving only the right upper extremity affected. As he grew up, all the extremities became large and strong except the right, which remained as it was after the illness. He does not remember that he had any other disease during childhood. He began to drink excessively when very young and had often suffered from the abuse of stimulants. He denies syphilis, but he has had several attacks of gonorrhœa and rheumatism. When admitted to the hospital he was apparently suffering from an attack of acute parenchymatous nephritis. Examination of the urine revealed a large amount of albumin with some blood and hyaline and epithelial casts. The heart was dilated and some evidences of pulmonary œdema were beginning to appear. On physical examination, the man was found to be of moderately strong build, and, with the exception of the right upper extremity, he was well developed and muscular. The extremity in question was remarkably undeveloped, normal in form, however, and of about the size of a child's arm. It was entirely useless. He could not raise the hand or arm or make any shoulder movements whatsoever. Flexion of the forearm in the slightest degree was impossible, as were also supination and pronation. The only movement that it was possible for him to make with this extremity was very slight flexion and extension of the fingers. That is to say, all the muscles supplied by the brachial plexus below the clavicle on the right side, with the exception in part of the flexor sublimis digitorum and the extensor communis digitorum and their connections in the hand, were paralyzed. The movements brought about by these muscles were only of the slightest and limited kind.

The patient succumbed on November 3, 1892. The autopsy showed an enormously dilated heart, extensive pulmonary œdema, acute parenchymatous nephritis which had been lighted up on an old interstitial degeneration of the kidneys, endocarditis and myocarditis, and a small, hard liver.

The brain and cord were carefully removed, the former being photographed at once and the latter placed in Müller's fluid for a few days preparatory to being examined externally. From a cursory examination made at the time of the autopsy, the brachial plexus seemed to be normal in construction, but the strands and filaments were very small and delicate. The brachial artery was in size proportionate to the arm. After the cord had been in Müller's fluid for a few days and had become sufficiently hardened to allow of its being handled with impunity, the thecæ were removed and the cord examined externally. The cord in the cervical region showed an appreciable diminution in outline anteriorly to the right of the anterior median fissure—that is, in the location corresponding to the exit of the anterior root nerves. It is not alone the shrinking in the contour of the cord that is noticeable, but the small size and lessened number of the emerging root fibers. The most remarkable discrepancy, both in number and size, in the nerve roots is seen at the exit of the fourth, fifth, sixth, seventh, and eighth cervical nerves. In the first dorsal the difference between it and its fellow of the opposite side is not so noticeable, and on examining the dorsal nerves lower down no difference between the nerves of the two sides can be detected. A drawing of the outlines of the cord of the cervical region (Fig. 2) shows the disproportion in the number and size of the nerve roots on the right and left sides. An attempt was made to count the number of strands entering into the roots of the nerves just after they left the cord. Of course it is a difficult matter to be accurate here, as artificial subdivision is so easy. However, great care was taken in the estimate, and the number of strands at the different levels on both sides as they appeared under a magnifying glass is marked on either side of the drawing.

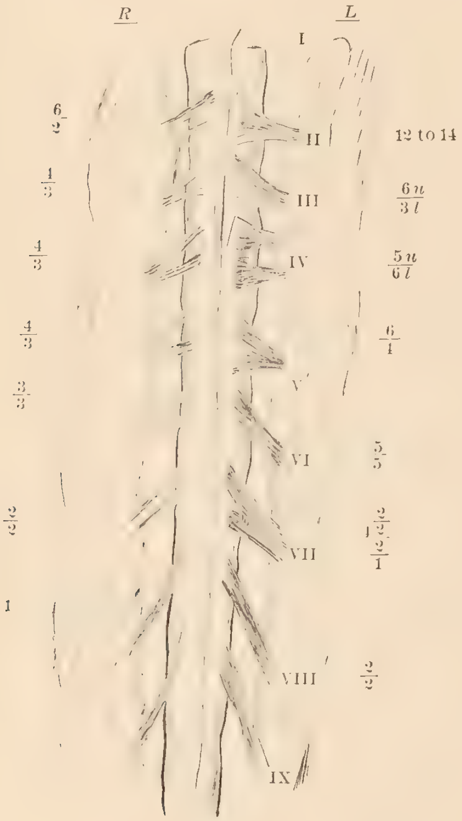

Fig. 2.

Later on, the completed microscopic examination tended to confirm the statement of Birge, who reached his conclusions after experimentation on monkeys and frogs. Birge found that in each segment of the cord of the frog the number of nerve cells in the anterior cornua corresponded nearly to the number of nerve fibers of the anterior roots arising from these segments. In the case we are considering the number of cells in the anterior gray matter corresponded very closely with the number of fibers in the anterior roots. It is to be remarked also that in this cord the difference in the size of the anterior roots of the right side as compared with those of the left is even more striking than the difference in the number of the fibers.

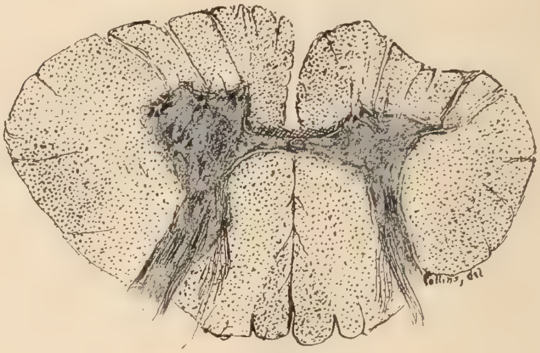

Fig. 3.

After proper hardening in Müller's fluid, the cervical cord was segmented, and, with the exception of a small portion that was taken from each segment for further hardening in Müller's fluid preparatory to staining with Weigert's hæmatoxylin, the segments were divided into thin pieces and placed for three days in a two-per-cent. watery solution of carminate of sodium. The pieces were then handled in the ordinary way. The small portions reserved for the hæmatoxylin stain were, after remaining for some days longer in the bichromate solution, cut and stained in single sections according to the modified Weigert method—that is, the method without differentiation. (See *Medical Record*, October 10, 1891.) This method of staining was employed merely to determine if there was any medullary degeneration, and also to bring into sharp outline the shrunken aspect of the anterior cornu on the affected side. This shrinkage is graphically shown in Fig. 3, and is in marked contrast to the outline of the gray matter seen in another disease accompanied by degeneration of the ganglionic cells—viz., progressive muscular atrophy, where the cornua retain their normal size and contour.

The pieces prepared by the carminate of sodium were cut in serial sections, mounted five to a slide, and in all about four hundred were made. It was thought necessary to do this in order that the observer might not be misled by variation in the number of ganglionic cells or differences in cell groups when seen in but a single or a few sections. Frequently single sections made from a perfectly normal cord will vary as regards the number of cells on each side. The drawings then were made from the composite picture, as it were, each drawing representing the conditions existing in five sections cut *seriatim*. They are not at all diagrammatic, the outlines having been traced by means of the Edinger drawing apparatus and the details filled in from the microscope.

The specimens stained with the Weigert hæmatoxylin do not show any sclerosis or degeneration in the white substance of the cord—that is to say, the motor tracts, the columns of Türck, and the crossed pyramidal tracts present no change except in size.

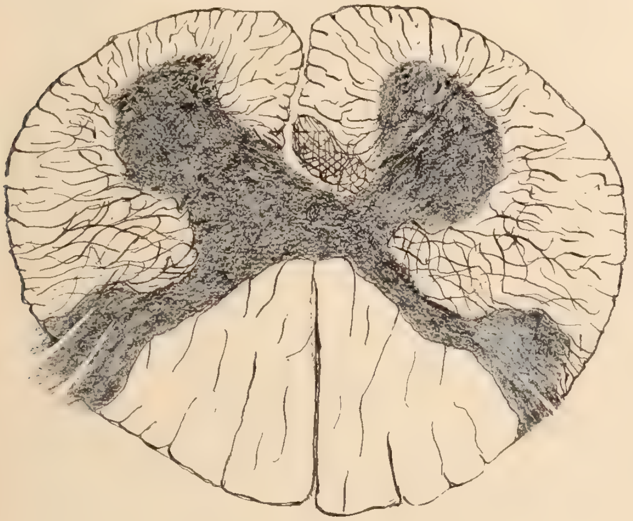

Fig. 4.

Examination of a section of the cord from just below the cervico-medullary junction shows (Fig. 4) that the outlines of the anterior horn on both sides seem to be normal. The crossing of the pyramidal tracts is just being completed. The upward continuation of the anterior motor group of cells is seen internally in both cornua, and this group of cells here is known as the nucleus of the hypoglossal nerve. Externally, on either side, can be seen the accessorius nucleus, and the cells entering into its formation are entirely normal.

(*To be continued.*)

The Death of Dr. A. Nellis, for many years one of the assistant physicians at the Willard Hospital for the Insane, took place on December 27, 1893, at Geneva, N. Y., of pneumonia. He was graduated from the Albany Medical College in 1872.

THE EYE TREATMENT OF EPILEPTICS.

A CRITICAL REVIEW OF CERTAIN FACTORS THAT MAY LEAD TO CONVULSIVE SEIZURES, AND THE TREATMENT OF EPILEPSY WITHOUT DRUGS.

By AMBROSE L. RANNEY, A. M., M. D.

No sadder misfortune can befall a human being than to develop epilepsy.

The horrible aspects of this disease are not confined alone to those who are called upon to witness the attacks, or to administer to the apparent sufferings of the afflicted. Their anxiety and distress are naturally most acute for the few moments during which they see a fellow-being suddenly become unconscious of his surroundings, distorted in face, trunk, and limbs, frothing at the mouth, livid in the countenance, and often bleeding from some wound produced by the sudden fall that ushers in the attack; but to the sufferer from this dreadful malady the distress of mind is not momentary, nor do the alarm and unconquerable dread disappear when the re-establishment of consciousness and physical power follows an attack.

Sooner or later an epileptic must become aware that his attacks are horrible to witness; that they are liable to occur at very unfortunate and unexpected moments; and that it is politic to keep people in ignorance of the existing malady.

For a while such victims are buoyed with a delusive hope that drugs will eventually restore them to health, and for a period varying from a few months to many years they are faithful devotees to some special combination of the bromide salts that their medical adviser or advisers may select. As each attack occurs, or as different physicians are consulted, some slight modifications of the bromide formulæ are commonly made; once again the patient's waning courage and increasing despair are bolstered by words of encouragement and the oft-repeated assurance "that this special combination will probably act better than the last one"; again the patient goes on, too often conscious of a decreasing mental power, a failing memory, or a general bromide stupor, and usually with a disfigured face from bromide eruptions, that advertises his sad malady to the world; again and again his slavedom to drugs is re-established with professional concurrence, when everything in the clinical history of the patient cries aloud to stop; and during all this time—the years of drugging, mental deterioration, and despair—no attempt has, in most cases, been made or even suggested that sources of reflex irritation of the nerve centers be sought for by methods of scientific precision, and, as far as possible, relieved before the constitution of the patient is broken down by drugs.

This is not an overdrawn picture, nor an exaggeration of the facts, as I see them almost daily in my consultation rooms.

That certain patients can and do take moderate doses of bromides (in all possible combinations) for a time without any very marked injury to health, and often with marked controlling influences upon epileptic seizures, it is useless to deny. Were it not so, the general use of these drugs could not have become so firmly established in medical therapeutics. The bromide salts (when first introduced to the medical profession) so far exceeded in their results upon epileptic seizures the preparations of zinc, silver, borax, etc., then in vogue, that the enthusiasm of the profession over a possible specific for epilepsy has been dissipated more slowly than it otherwise would have been. It has taken many years to convince most of the leaders of professional thought in this country and in Europe that too much should not be expected from the bromide salts; that the beneficial results obtained from them in epilepsy are not permanent, as demonstrated by the frequent attacks that follow a complete cessation of the drug; that the constitutional effects of bromide salts may in chronic cases of epilepsy prove serious; and that epilepsy is an incurable disease when treated exclusively by drugs, except in the rarest of instances.

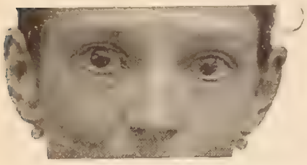

Fig. 1 Expression of a patient with a marked hypo-esophoria. The head is tilted, indicative of hyperphoria.

The point that I would make in this connection regarding the administration of the bromide salts is, that the *principle of treatment of convulsive seizures by drugs is wrong*, provided no previous attempts have been made to discover or remove conditions that can be accurately determined and which have been shown, by the observations of more than one, to be related to the causation of epilepsy.

I can see no more intelligence in administering bromides to an epileptic patient until the condition of the eyes, and often of the nose, teeth, genitals, and anus, has been carefully examined for positive sources of reflex nervous disturbance, than I should in administering chloro form regularly to a patient afflicted with a severe toothache to stop the manifestations of an abscess at its root or some exposed nerve cavity.

To *benumb the cerebral centers by a drug* so that they ceased to respond to reflex irritation from any peripheral source *is not curing the disease.*

Such a principle of treatment is absurdly irrational and opposed to physiological research. Experiment has clearly demonstrated that epileptic seizures may follow peripheral lesions from the reflex irritation thus excited. This can not to-day be denied in the face of overwhelming evidence. To treat epilepsy by drugs without previously searching for all the exciting causes that may exist is no longer creditable to the medical attendant.

On the other hand, while discussing any form of treatment of epilepsy, we are compelled to accept the results of bromide salts upon the number of seizures in any individual case as a basis of comparison, when the results of any other method are subsequently recorded.

Bromide salts (in various combinations) are to-day generally regarded by the medical profession as certainly the most prompt, and possibly for a time the most efficacious form of treatment of epilepsy.

When it can be shown that in any individual case the number of epileptic seizures has been made numerically less than when bromides have been skillfully employed for a sufficient period to test their efficacy, or, in other words, if it can be demonstrated that the condition of any epileptic patient has been improved without the aid of drugs, no medical man can deny that an important advance has been made in the scientific treatment of this malady.

Those who have had the largest experience in the use of bromides are to-day beginning to lose faith in them as a curative measure in the treatment of epilepsy.

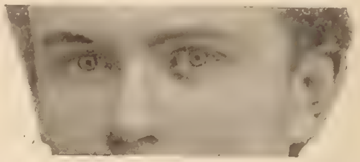

Fig. 2. Unilateral exophoria closely bordering upon unconquerable diplopia (crossed diplopia).

Within the past year I have seen many patients with epilepsy who have been advised by leading medical men of the larger cities to consult an oculist, and it is the exception, so far as I can learn, for medical men of distinction to day to extend to an epileptic patient any hope of permanent cure by medication alone.

Not long since a leading neurologist of this country told a patient afflicted with epilepsy that "bromides, trephining, and eye treatment comprised about all that offered any chance of his improvement."

It is well known that a total cessation of bromides in most instances where they have been administered for any length of time as an aid in controlling epileptic seizures, is followed by a very marked increase in the frequency and severity of the attacks. So marked is the relapse in many cases that the patient, the family, the friends, and even the medical attendant become seriously alarmed, and the drug is again resorted to, in spite of the reasons that led to its cessation, simply as a choice between two evils—mental and physical deterioration on the one hand, and "status epilepticus" or possible death on the other.

One case of this kind comes vividly to my mind in this connection. A young girl afflicted with epilepsy had taken bromide salts for some years with the effect of controlling her attacks to intervals of from ten to fourteen days. She was brought to me for an examination of her case, and very marked defects of the eyes, both of focus and muscular adjustment, were discovered. I advised the friends to discontinue the bromides for a month, during which time I might be able to form some opinion respecting the frequency of her attacks without drugs and have a fair basis for comparison regarding the effects of eye treatment upon her at the expiration of that period. As I proposed to use no drugs during the correction of the eye defect, the condition of the patient could then be contrasted from time to time with her actual condition before the eye treatment, when it was not masked by the influence of drugs.

The parents consented. Within forty-eight hours the child had *continuous convulsions for twelve hours*, and the medical attendant wrote me that "he was so afraid that she would die that he immediately began the administration of bromides in large doses." He asked me in this case to make an exception to my rule and to allow the patient to take bromides until I deemed it safe to discontinue them. After two weeks of eye treatment all drugs were discontinued without any serious results to health.

A similar result to this was mentioned in a medical meeting some years ago by a leading neurologist of this city as occurring in one of his patients, whom I advised to discontinue bromides prior to a proposed tenotomy by me upon one of the eye muscles. A condition of continuous epilepsy followed within twenty-four hours — although, while under bromides, the patient had been led to think that a cure was being effected by their use.

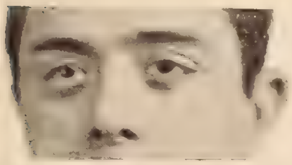

FIG. 3 Expression of a patient with extreme esophoria; closely bordering upon convergent strabismus, but maintaining binocular vision.

In my experience, the cessation of bromides is sure to be followed in almost every case of epilepsy by a very marked increase in the number of seizures; just as a cessation from drinking in a confirmed inebriate discloses to him his actual physical condition. Whether it is wise to continue a habit that is slowly undermining the health, because the victim is afraid to stop, is an important question. Unfortunately, it can not be discussed here. It is imperative, however, in all honest endeavors to determine the results of any scientific procedure, that the results obtained shall not be open to question and invidious criticism from neglect on the part of the investigator to exclude other factors that may have aided in attaining the published results. In all the cases that I report in this article no drugs were employed while the patient was under my care.

In looking over the records of those cases of epilepsy that have been subjected to the eye treatment exclusively while under my care, I find it impossible to incorporate them all. The number, in the first place, would be too large to admit of their complete histories, and the labor of preparing their records for publication would be too great. Again, many of the patients, for personal reasons, refused to submit to such steps as I deemed wise for their epileptic condition and were dismissed by me as patients, while others had organic diseases that precluded them from being fit subjects for the eye treatment. A certain number had marked evidences of kidney disease, syphilis, and tuberculosis.

Some began treatment, and, after satisfactory progress for a few months, failed to notify me of their change of residence and have not been seen or heard from for a long time. Some have died of intercurrent diseases. A few have been killed by accidents, while ocular anomalies that had not been rectified prior to the accident were being investigated.

While it would be of great scientific interest to obtain some deductions regarding the percentages of progress in those patients that have been under this treatment, I am satisfied that a *purely numerical basis for estimating results in the treatment of epilepsy is impracticable and misleading.*

A patient who (while under bromides) was stupid, apathetic, and incapable of participation in business, has been greatly benefited (even if his attacks are not markedly less than when under bromides), provided he has regained his normal intellectual status and is capable of self-support.

Numerically, he might be regarded as unimproved if the actual number of his attacks should be counted; but the gratitude of the patient and his friends for his restoration to usefulness is not without reason.

A person who has been enabled to dispense with a constant attendant or nurse has been benefited; a child who can go to school and make satisfactory progress in his classes after escaping the thraldom of bromides is vastly better than a sleepy, sluggish child who has to be constantly cared for—even if he does have an occasional epileptic seizure.

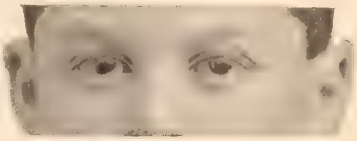

FIG. 4.- Expression of a patient with an enormous amount of "latent" esophoria.

Some years ago, in a reply to a somewhat severe criticism upon the views relating to the treatment of epilepsy that were published in my work on *Nervous Diseases*,* I contributed an article to the *Boston Medical and Surgical Journal* from which I may pertinently quote a few paragraphs. I remark in this connection:

> Josh Billings, in one of his characteristic effusions, says:
>
> "*I hav alwus notised when an individual hain't got the ability tew criticise judiciously, he dams indiskriminately.*"
>
> Relative to the question of treatment of some of the functional neuroses (such as epilepsy, chorea, neuralgia, insanity, hysteria, headaches, etc.), two distinct and opposed views are now held. Those who still pin their faith upon the internal administration of the various bromide salts in these diseases remain apparently indifferent to the fact (which can hardly be disputed in the face of overwhelming evidence) that serious and permanent harm almost inevitably follows their administration in large doses for any length of time. Those, on the other hand, who argue that scientific methods of precision (when properly employed) will often reveal the existence of an *exciting cause* for those nervous conditions that drugs only tend to alleviate for a time, and who base this treatment upon the accurate determination of the exciting cause and its complete correction before they resort to drugs, are to day subjected not infrequently to ridicule and personal attack by others not thoroughly posted in the methods employed by them.
>
> It took Lister and his followers some ten years to teach the profession that, if the antiseptic method was to be tested as a basis for adverse criticism or for the benefit of suffering humanity, the operator must clean his finger nails; that he must also wash his hands with great care, make his knives aseptic, and follow out the published plan of procedure with due regard to detail, before the results obtained could be worthy of publication or in any way reliable as a basis of scientific deduction.
>
> Not long ago a famous orator told the following fable:
>
> "A well-fed horse who, in his greed, scattered grain upon the floor of his stall, became in consequence the constant companion of a rooster who picked up the scattered oats. One day the rooster suggested that friendly relations were desirable and

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* *Lectures on Nervous Diseases.* F. A. Davis, Philadelphia, 1890.

would be put on a much firmer basis by the existence of a solemn agreement between them. The horse assented, and, on asking the basis of the compact, was told that it should read: '*Neither of us shall step on the other's feet.*'"

I do not desire to carry out in full what, to my mind, might be the true application of this fable. None of us desire to stir up discord if important facts can be insured a fair hearing without recourse to asperity—but the establishment of a great truth can not be crushed by being "stepped upon."

I quote again, in this connection, from a later brochure of mine the following paragraphs:

> "One thing is evident—viz., *the view that 'eye-strain' can and frequently does cause serious nervous conditions must be either true or false.*
>
> "If it be false, then it has made steady progress in spite of its weakness and against organized and bitter opposition; if false, then the growing list of converted advocates among the younger oculists and neurologists is incapable of explanation; if false, then the thousands of suffering humanity are deceived who believe that they have cause for the deepest gratitude in the recognition and relief of an existing 'eye-strain.' It is contrary to all precedent that a mere 'fad' should steadily flourish and gain strength year by year over a period of many years; neither does the statement that some cases have failed to be benefited by this treatment have any weight in argument. Every method of treatment of disease sometimes fails to relieve individual cases; yet no one attempts to discard all therapeutical efforts in consequence of this fact, because such a deduction would be manifestly illogical."

In the reported cases that follow, some terms are employed that may require explanation to the general practitioner, although they would be easily understood by the oculist. These are comprised in the following table:

Terms related to the focus of the eye (*refractive terms*).	Hypermetropia (*far-sightedness*). A *shallow eye* (from the front to the back), causing an imperfect focus of objects.
	Myopia (*near-sightedness*). An *elongated eye* (from the front to the back), causing an imperfect focus of objects.
	Astigmatism. An *irregularly curved cornea* or *lens*, causing distortion of images on the retina.
	Emmetropia. A *perfectly constructed eye.*
Terms related to the muscles which move the eyes (*muscular terms*).	Esophoria. A tendency of one or both eyes to deviate toward the nose.
	Exophoria. A tendency of one or both eyes to deviate toward the temple.
	Hyperphoria. A tendency of one eye to rise above the level of its fellow.
	Orthophoria. Normal adjustment of the eye muscles.
	Heterophoria. A term that covers al forms of abnormal muscular adjust_ment.
	Adduction. The power of the internal muscles of the eyeballs. *It varies in health between 25° and 60°.*
	Abduction. The power of the external muscles of the eyeballs. *It should be 8° in health.*
	Sursumduction. The power of the vertical muscles of the eyeballs. *The right and left should be alike.*
Various forms of glasses employed by oculists.	Spherical. Ground upon a *convex or concave sphere.* Used to correct hypermetropia and myopia.
	Cylindrical. Ground upon a *convex or concave cylinder.* Used to correct astigmatism.
	Prismatic.—*Two plane surfaces of glass meeting at an angle.* The thick side is termed the base of the prism. Used to relieve errors of adjustment of the eye muscles.

Before I pass to the consideration of individual cases of epilepsy whose histories have been prepared by me with some care (not alone with the object of showing the ultimate results of treatment of the eyes, but also of demonstrating that permanent and beneficial effects have been secured in correcting anomalies of adjustment of the eyes by graduated tenotomies upon the eye muscles) it may be well for me to impress upon the reader an important fact which seems peculiarly hard for some oculists to grasp—viz., that "*latent*" *anomalies of the eye muscles are to-day as well proved as is the existence of* "*latent*" *hypermetropia.*

By this I mean that the amount of esophoria, exophoria, or hyperphoria discovered at the first examination of any patient does not necessarily represent the *actual amount that exists.* In many cases it constitutes but a very small proportion of the amount that has to be corrected before beneficial results are to be expected from eye treatment (see Cases IV, VI, VII, XII, XIII, and others).

I recall an epileptic who manifested for many visits at my office but one degree of esophoria; yet that patient eventually disclosed, after weeks of careful observation, a high degree of esophoria, and at times had unconquerable double images (*homonymous diplopia*).

Fig. 5.—Extreme manifest hyperphoria, with some esophoria (latent). The *tilting of the head* (that often accompanies hyperphoria) is quite marked.

My friend Dr. G. T. Stevens has very happily illustrated this very important point in a paper upon Heterophoria,[*] read by him before the Pan-American Medical Congress. I take the liberty of quoting a few paragraphs that bear vitally upon the investigation and solution of complex ocular problems. He says:

> "One of the first of the elements in the management of these cases is patience. The oculist who imagines that he can measure and correct his cases of heterophoria in an offhand manner has not reached an understanding of the first principles of the subject. A case which at first appears quite simple and easy to handle may prove to be one which for its best correction may demand the exercise of great skill and of unwearied pa_tience during many months.
>
> "We can not know when we begin the treatment of a case of heterophoria the full meaning of the indications which we then discover. One who thinks that he has found an instrument which will reveal latent heterophoria is surely laboring under a misapprehension. As we go on in the treatment of these cases new difficulties may arise and new efforts may be

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[*] *N. Y. Med. Jour.*, Nov. 18, 1893.

demanded. This is no reason for not beginning the work, and less for abandoning it before completion.

"I have sometimes illustrated these progressive difficulties by recalling the experience of one who climbs a mountain. He sees before him a height which appears to him the summit which is to reward him for his effort, but when he reaches it he sees before him another even higher than the one which he has surmounted. He ascends higher, and when at length he attains to the second height the real summit is still above him. Is he therefore to say, 'There is no end to this, and one might climb indefinitely without finding the summit?'

"There is a summit, and one may reach it if he has the needful strength and courage.

"I am sometimes asked by my colleagues if there is no end to the treatment of these cases. Does not the condition which has been apparently removed return? Must the treatment not continue indefinitely?

"The heterophoric condition which has been in any measure properly corrected does not return, but that part of the original defect which was at one time latent may at a subsequent time become manifest.

"There is as surely a limit to this work as there is a final summit to the mountain, and when one reaches that limit he has an infinitely greater satisfaction than he who finally gazes upon the stretch of hills and plains and lakes from the elevation which he has earned.

"Many who do not care to take the trouble to climb decline to accept the reports of those who do, and many an eminent man who has lingered about the foothills of this work is incredulous because he can not obtain the same grand view that has been described by some one who has gone beyond.

"An essential to success in this work must be a thorough knowledge of the principles governing the tensions of the muscles with which we work.

"Instruments can not know these principles. They are only to be learned by long and patient research on the part of the oculist."

Again, I would endeavor to disabuse the professional mind of an impression that seems to be too common, in spite of the amount of literature that has appeared during the past decade upon this field. *The development of "latent" muscular anomalies of the orbit is not to be confounded with the effects produced by forcing the ocular muscles to adjust themselves to prismatic glasses that are not properly prescribed.* There is a radical difference between "forcing a patient to adjust his eyes to a prismatic glass" that he has had given him and assisting a patient in his ocular perplexities by giving him a prismatic glass *that only partially corrects* the amount of heterophoria that he discloses.

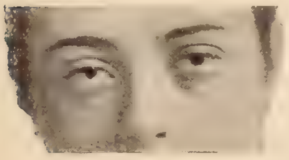

Fig. 6. Expression of a patient with a high degree of manifest esophoria and a moderate degree of hyperphoria (latent) The head is slightly tilted—a posture that is suggestive of existing hyperphoria.

So long as any patient accepts a prism for the relief of an existing eye-strain that he discloses and still shows (while wearing it) a clear surplus that the prism fails to correct, we are simply following the guide that the patient unconsciously gives us as a step toward the solution of the problem without any possibility of "forcing the patient to adjust for the prism."

Again, if we find (by measuring the strength of the individual eye muscles) that the amount of deficient power in any one set of muscles corresponds to and justifies the amount of abnormal deviating tendency of the eyes that the patient discloses, we are still further strengthened in our position relative to the prismatic glass prescribed.

Case VI illustrates this point as well as any case can; and the reader is referred to the history of this patient and the details of his treatment. This boy had almost *absolutely perfect refraction*, even under atropine; so that all question regarding his "apparent muscular anomalies being caused by some error of refraction" is refuted in this case.

Moreover, his *heterophoria was extreme but almost totally "latent."* The deviating tendencies of the eyes were both vertical and lateral—"hypo-esophoria."

Even to-day (five years after the first examination) some esophoria still remains uncorrected except by a prism, although vertical equilibrium seems to be fully established. The only fit the patient has had in over two years followed the discarding of the esophoria prisms, and he has had no attack since they were ordered to be worn constantly.

This boy's history has been published by me before, as one of the most remarkable cases on record. I am glad to report that during five years from the date of his first visit to my office he has had but six days during which seizures have occurred, in spite of the complete withdrawal of all drugs, and that he *has passed two years and three months without a seizure*, when, by leaving off his prisms contrary to instructions, he had an attack after going a few days without them, but has had none since the prismatic glasses have been resumed.

I expect soon to relieve the remaining esophoria by a tenotomy, and to dispense with all glasses by so doing. I have been slow in doing so, because I desired that the patient should become thoroughly accustomed to the altered ocular conditions that followed four graduated tenotomies in a comparatively short time, and that ample time should be afforded him to disclose any latent heterophoria that might remain.

Now, what has been done for this boy thus far by "eye treatment"? He has already passed over five years without recourse to poisonous drugs; he has been saved thus far from a life in a lunatic asylum and restored to usefulness and health; he has had, except on six occasions, complete immunity from his horrible disease in spite of the total cessation of bromides he has returned to his former association with his companions; and he is to-day able to go about without an attendant, or the dread of impending disaster and possible confinement.

He has happily learned, I trust, that excessive and violent exercise and a disregard of instructions about wearing his glasses are dangerous to his comfort, as they tend to cause an epileptic attack, and also to derange his digestive apparatus seriously. Had it not been for such extreme imprudence, he would probably have been entirely free from attacks during the past three years.

Do we know that this remarkable change is due to the eye treatment? Most certainly!

This patient had never before passed so long a time without attacks as he has since eye treatment was begun, although he had been constantly drugged, according to the most approved fashion of the present day, for his epileptic seizures. During the year preceding eye treatment he had had thirty-four days in which a series of fits occurred, although heavily drugged with chloral and bromides. He had found in the bromides for some years the only refuge that medicine offered to keep these frightful attacks within bounds that did not seriously endanger life. He naturally felt, as did his parents, that to let go that anchor was to drift beyond aid into hopeless despair. When, therefore, I stopped his bromides at the first visit, every one concerned (the patient, his parents, his friends, and myself) felt quite sure that, unless something was done as a substitute for the drugs, the fits would surely become more frequent and severe. This substitute for drugs *took the form of an operation* for what I deemed the exciting cause of the attacks. Another operation was done on the corresponding muscle of the opposed eye, as soon as the necessity for it became apparent. Then we felt comparatively safe, and the patient could await with greater safety the effects of prismatic glasses.

When a house has been partially burned no one expects that putting out the fire will at once restore the house. It does, however, prevent further damage, and decreases the time and cost demanded for its restoration. Hence it is always deemed imperative to extinguish the fire without unnecessary delay.

We must all admit, I think, that epilepsy is certainly the gravest of all the functional nervous maladies, and that it is, as a rule, incurable by drugs; hence, as I have remarked in a previous discussion concerning this subject, "one radical cure of epilepsy without the aid of drugs offsets a thousand failures as a scientific proof of a discovery."

Case I again illustrates the fact that a *latent esophoria* (independent of any marked error of refraction) was clearly a factor in producing from *two to ten attacks of petit mal during each day*, which bromides failed to control. He has passed nearly a year without any symptom of epilepsy since the date when the esophoria was radically relieved by graduated tenotomies.

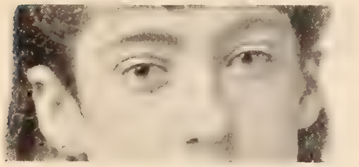

FIG. 7.—Expression of a patient with "latent" hypo-esophoria. The tilting of the head (indicative of hyperphoria) is marked.

Case II shows clearly that *hypo-esophoria* was a more important factor in causing epilepsy than astigmatism. No marked relief followed the correction of the latter by glasses; but a remarkable change for the better followed graduated tenotomies upon the interni and the superior rectus muscle.

Case III illustrates a very *remarkable improvement in an epileptic idiot* that followed the correction of double convergent strabismus by two tenotomies and a high degree of latent hypermetropia by glasses.

Case IV illustrates a *complete cure of chronic epilepsy* (that had withstood all therapeutical treatment for twenty-four years) through the correction of latent esophoria by graduated tenotomies and latent hypermetropia by glasses. For seven years, without drugs, no epileptic seizures have occurred.

Case V shows the existence of an *extreme degree of astigmatism in one eye*, associated with a large amount of latent esophoria. The patient has regained his full mental power (that became seriously impaired by the use of bromides), and has only had one slight epileptic seizure in three years following graduated tenotomies upon both interni and a full correction of the astigmatism by glasses.

Case VI has already been discussed at some length. Only one slight seizure has occurred in three years, as contrasted with thirty-four days of almost continuous convulsions during the year preceding the eye treatment, while the patient was heavily drugged with bromides and chloral.

Case VII illustrates the fact that an epileptic patient, whose family history was not of a promising kind and who had inherited a marked tendency toward nervous disease, was cured through the relief of latent esophoria by graduated tenotomies, and the correction of a moderate degree of latent hypermetropia by the use of glasses for reading and other eye work at close points. No epileptic seizure has occurred for two years and six months. The direct relationship between the eyes of this patient and his epileptic seizures was shown (somewhat unusually) by a very marked tendency toward an epileptic attack whenever an attempt to measure the strength of the interni was made prior to the dates of the graduated tenotomies for the relief of the esophoria.

Case VIII illustrates simply that *admirable results from graduated tenotomies can be obtained in cases of extreme heterophoria.* This patient unfortunately lacked sufficient patience and fidelity to enable me to determine the ultimate effects of the eye treatment upon his epileptic seizures.

Case IX shows that a sudden withdrawal of bromides from the patient prior to the correction of the heterophoria caused (within twenty-four hours) a state of continuous epilepsy that imperiled life, and that, *after two graduated tenotomies, the bromides were suddenly withdrawn from the same patient without any ill effects.* She has fewer attacks to-day than when under the influence of bromides, and is markedly improved in her general physical condition. Photographs of this patient in my possession, made at intervals from untouched negatives prior to and during the eye treatment, illustrate the physical change in a remarkable way.

Case X proved to be one of *extreme latent* esophoria. Although the power of abduction has twice been apparently brought to nearly the normal point by graduated tenotomies upon the interni, a gradual diminution of the power of the externi has occurred. The patient has been very markedly benefited, however, by the eye treatment.

Case XI was one of severe and frequent epileptic seizures that, unfortunately, was terminated by the accidental death of the patient before the final results of eye treatment were determined. Sufficient improvement had, however, been observed to justify the belief that still better results would in time have been recorded. The "family history" in this case was a bad one, and the patient was a difficult one to control, being headstrong and disobedient to instructions.

Case XII illustrates a remarkable restoration to health (after a complete withdrawal of bromides from a patient that manifested their poisonous effects to a marked degree) from the correction of eye defects that were indirectly creating reflex nervous disturbances. Not only have all epileptic seizures ceased for the past three months, but all hysterical attacks, that were formerly so frequent, have apparently been entirely cured.

A letter, dated November 25, 1893, written by her husband from the West, says:

"I am glad to say that Mrs. G. passed through the trip safely, with no trouble of any kind. She did not even have a headache, nor feel in the least nauseated, which is something unheard of for her before. She appears bright and cheerful, and we feel that we owe it to you."

Case XIII is one of the most interesting cases, from a scientific standpoint, that I have yet encountered. Under full effects of atropine, she showed *no errors of refraction*, and for several successive days *no apparent error of adjustment of the eyes was manifested.* The case looked unpromising, and the cause of her epilepsy seemed to be involved in obscurity. For a week the effects of esophoria prisms upon the patient were observed, a low abducting power being the only guide to the existing latent heterophoria that eventually was disclosed by the patient. A radical correction of the heterophoria (that was totally latent) by one graduated tenotomy has for over nine months arrested any tendency to convulsive seizures, and apparently effected a complete restoration to health in many other ways.

(*To be continued.*)

THE RELATION OF
NEOPLASMS TO NORMAL STRUCTURE.

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Too little attention has been paid by pathologists to the precise morphological relation, which exists always as a constant factor in the problem of abnormal structural development, between what may be called the dynamic equivalent of growth in a neoplasm and that of the normal physiological structure. At first blush this may smack a little of the transcendental or metaphysical—too much, perhaps, to command the attention of "the busy practitioner"—but a little further investigation will show that there is an immense practical significance behind this nebulosity of sesquipedalic nomenclature, and it is this which I propose to lift away as far as the limits of a journal article will allow.

When the great pathologist Virchow, whose work on cellular pathology was for a long time the gospel of medical literature, at last came to the conclusion that all of his beautiful cellular system was founded upon untenable premises, and was constrained to reconstruct his whole pathological philosophy, it was then that the first clear light was thrown upon the mode of development of morbific growths, which were hitherto recognized as distinct cellular growths, independent of the structure in which they were found, except so far as the elements of nutrition were concerned, which furnished the pabulum for their development. In defining the varieties of malignant growths, therefore, it was natural, after determining the specific character of cell which entered into its morphology, to stop short at this point without looking deeper into the origin of such cellular activity to determine the exact morphological relation of the pathological structure to that in which it was found imbedded. Later investigations proved, first, a constant relation between certain tissues and the neoplasms possible to their cellular structure. For example, the numerous varieties of cancer were found to be possible only to those tissues whose cellular structure presented the same cellular *organon*, or plan of proliferation, as well as morphological similitude itself.

While it was beyond question that the neoplasms or morbific growths found in muscular tissue were never to be found in bone, for example, and while it was well known that the cell of any morbific growth, laid side by side with the cell of the normal physiological structure in which it was constantly found, presented the same general morphological characteristics, both in appearance and in development, it was remarkable indeed that this constant likeness was not given the practical importance which was due to it—the study of the growth and the remedial measures considered for its removal or arrest, proceeding upon the basis of its absolute independence. Where is to be found a stranger or a graver error in the whole realm of pathological investigation? What, then, are we justified in establishing as a constant relationship between the two? is the practical question which lies before us—the answer to which not only determines the law of pathological cell development, but opens up to us the proper line of therapeutic attack, which has been so uncertain and obscure. The line of demarcation which divides the pathological from the physiological is often so very vague that it is only in the fully-formed structure that we find the differentia of development. We must therefore start out with this formula, which, from the inductive fact that it has never been contradicted in pathology, amounts almost to an axiom. Every cell which enters into the structure of any abnormal growth presents a like morphological character with the cell of the normal structure in which it is found. The next proposition, which is the natural corollary of this formula, is that the mode of development of any neoplasm or morbific growth has the same general line of activity, and however different in ultimate appearance may be this growth from the structure in which it is imbedded, the plan of nutritive evolution is the same for both. It is, then, clear that the nearer we bring the cellular character of the neoplasm to that of the normal structure upon which it has been pathologically superinduced, the greater similitude will there be in the result of the development. Does not this, then, suggest to us naturally that the true line of therapeutic action lies in the direction of reducing the nutritive conditions of development in the morbific growth, as far as possible, to those which govern the structure in which it is developed—which is indeed, as it were, the *physiological matrix* of the neoplasm? Were it possible for us to divert the selective nutritive material which is common to both the physiological and pathological structures in such close proximity of growth into the normal channels of the organism, and by this means arrest the pathological growth before its developmental differentiation is fully established, we should thus, by the substitution of a hypertrophic condition of the physiological structure, change a neoplasm into a hyperplasm, whose ultimate differential of tissue would be so reduced as to nullify or sufficiently minify the destructive effects of the neoplasm upon its local surroundings and upon the organism at large, for it is in the divergence of development that the danger lies. This fact has been practically recognized in the classification of tumors as *malignant* and *benignant*—the former, from a structural standpoint, being those whose rapidity of growth in a divergent line of development has reached that point or degree of dissociation with the subjacent or circumjacent tissues which makes it no longer possible for both to draw upon the nutritive supply without destructive assimilation, the latter being those which preserve, as it were, the parallelism of growth within the limits of retrograde metamorphosis.

This may look like putting the salt on the bird's tail to catch him; but closer inspection will reveal the fact that it is possible to divert the neoplastic pabulum into physiological channels by the digestion of those pathological structural elements through the medium of some agent that by elective affinity may separate these from the cells themselves without attacking the physiological structure. It is well known to pathologists that the great distinguishing characteristic of morbific growths is their instability, their tendency to degeneration or retrograde metamorphosis as compared with normal tissue. Indeed, it is this degenerative tendency to which their malignity is chiefly due, and in proportion to the degree to which this prevails does the malignant effect upon normal tissues become apparent, for in the physical as in the moral world the *facilis descensus Averni* prevails—contiguity of growth and similitude of developmental *organon* rendering it easier for the normal tissue to take on the pathological tendency of the neoplasm than for the latter to rectify itself into normal physiological lines of development. It is just here that we must come to the rescue, and this may often be accomplished in the early stages of the pathological growth, not by direct destruction, but, on the contrary, by the excitement of nutritive activity in all the surrounding parts. But the question will be asked, and naturally enough, Does not this supply of excessive pabulum furnish material for the increment of growths in the pathological structure as well as in the subjacent physiological structure? Undoubtedly it does. But while we may increase the cellular activity of the growth thereby, we are at the same time increasing the vital resistance of the normal tissue and holding in abeyance the retrograde metamorphosis of the neoplasm to which the destructive assimilation of the normal structure is due. And, further, it will be seen to follow that this parallelism of growth to which we have referred is thus maintained, holding a malignant tumor in this way within the destructive limits. Let us advance one step further in our reasoning and it will be at once apparent that if at the same time that we increase the pabulum upon which the growth of both the normal and abnormal tissues draw for support we should bring into play some such agent as that referred to above, which would, by an elective process, attack the stroma of the neoplasm, which is weaker than the "formed material" of the physiological structure, we shall come very near fulfilling those conditions which will cause an atrophy of the neoplasm, even if we have a hypertrophy of the normal structure as a permanent result. In another paper, purely practical in its character, I have suggested pepsin as a therapeutic agent in pathological conditions which have been established in accordance with the laws of neoplastic growth which I have here endeavored to elucidate. Suffice it to say in this connection that it is the only agent known to modern therapeutics which possesses this elective affinity to such an extent as to digest products of retrograde metamorphosis in the presence of normal tissue without arresting or destroying the cell activity of such tissue. It will—as I have often proved, where the vital resistance or, to speak with greater scientific accuracy, the dynamical equivalent of the growth force is very weak—carry its dialytic action into the very cell itself of the neoplasm without injury to the tissue in which it is imbedded.

From what has been said, therefore, I think it is clear that I can substantiate these conclusions:

1. The morphology of a neoplasm always presents a similitude of cell characteristics with the normal physiological tissue in which it is imbedded.

2. The *organon* of development is in the same line of cellular activity at first, and the extent of divergence from that line determines the degree of malignity.

3. Parallelism of growth holds the neoplasm within the bounds of retrograde metamorphosis upon which destructive assimilation of normal tissue depends.

4. Parallelism of growth may be maintained by an increment of pabulum for both physiological and pathological structures lying adjacent to each other.

5. Any agent that by elective affinity will attack the stroma of the neoplasm without affecting the formed material of the physiological structure will tend to cause or will cause an atrophy of the neoplasm and a permanent hypertrophy of the normal tissue and neutralize the effect of the destructive assimilation of the abnormal growth upon the normal structure in which it is imbedded.

6. There is no known agent but pepsin that fulfills this indication with any degree of satisfaction.

In another paper I shall endeavor to show the practical means at our command of establishing this *parallelism of growth force*, and also the manner of applying pepsin as a therapeutic agent in the arrest and destruction of neoplasms.

The Columbian Dispensary, of Brooklyn.—A new charitable undertaking has been begun at No. 140 Clermont Avenue, Brooklyn, in a dense population poorly provided as to medical attendance. Dr. George R. Kuhn is the leader in the attempt, but he has the support of the clergy in his vicinity. The following physicians will give their assistance to the dispensary: Dr. D. E. Callaghan, Dr. A. F. Carroll, Dr. P. J. Curran, and Dr. James F. Gallagher. It is designed to make the institution strictly unsectarian.

The Death of Dr. Joseph John Summerell, of Salisbury, North Carolina, removes the superintendent of health of Rowan County and one of the ex-presidents of the State Medical Society. He was a graduate in arts of his State's university, and in medicine of the University of Pennsylvania, in the class of 1844. For six years he was a member of the State Board of Medical Examiners, and for two years was chairman of the County Court. He was a corresponding member of the Gynæcological Society of Boston. The *Bulletin* of the State Board of Health expresses its feeling of loss in his decease in the following terms: "At the age of seventy-four, this faithful physician, sterling citizen, and Christian gentleman, surrounded by his children and in possession of the respect and affection of his neighbors, after a long life of usefulness and honor, passed to his reward. The State, the medical profession, and especially the cause of sanitation in North Carolina, have suffered a serious loss. While the oldest, he was, nevertheless, one of the most active and enterprising superintendents in the State. We shall miss him, personally as well as officially." The cause of his death was double pneumonia consequent upon an attack of epidemic influenza.

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THE STATUS OF ACTING MEDICAL OFFICERS OF THE ARMY.

About two years ago Dr. John T. Nagle, of New York, sought by application to the Secretary of War to be awarded one of the medals of honor authorized by Congress in 1863 to be presented to such officers, non-commissioned officers, and privates as had most distinguished themselves in action. His request was denied, partly on the ground that he had allowed so long a period as twenty-eight years to elapse before making it and partly because the acts of gallantry for which he sought recognition had not been mentioned in official reports, but chiefly for the reason that at the time of performing those acts he was neither officer, non-commissioned officer, nor private. In a renewal of his request, made last summer, Dr. Nagle states that the conspicuous acts of bravery on which he founds it were performed by him at the battle of Kernstown, in Virginia, on July 24, 1864, while he was serving as an acting assistant surgeon, or "contract surgeon." It seems that the commander of a body of dismounted cavalry was wounded and disabled, and its other commissioned officers abandoned it, whereupon Dr. Nagle assumed the command and rallied the men; that he attempted to spike a gun in the face of the enemy and assisted in saving it from falling into the enemy's hands when it had been abandoned by the Union forces; that he set fire to a baggage-wagon and destroyed other material of warfare that would otherwise have been captured; and that he was one of a party of five that rode under a flag of truce toward the enemy's lines at Bolivar Heights and reported the disappearance of the enemy to General Sigel, thereby relieving the besieged army at Maryland Heights and liberating it for action. Dr. Nagle is quite warranted in adding, as he does, that these acts, having been performed while he was serving as a medical officer, ought to be considered more meritorious than if they had been done by a field or line officer in the line of duty. Testimony as to the performance of the acts specified is borne by Lieutenant-Colonel Young, now of the 4th Cavalry, and by Captain Mason, of the 2d New York Cavalry.

Dr. Nagle has recently published a pamphlet in which he recounts the facts pertaining to his petition and to its denial by the War Department, and argues very forcibly against the justice of that denial. His argument deals principally with the ruling that an acting medical officer is not an officer within the meaning of the act. This ruling rested partly on the statement that acting medical officers were not required to wear a uniform. We have heretofore supposed that this was the case; the writer of this article, who himself served as an acting assistant surgeon for several months, never saw such a medical officer in a first lieutenant's uniform, although he distinctly remembers that the medical officer of the day always wore a sash and, in the absence of a commissioned officer, actually exercised command over the non-commissioned officers and enlisted men at a post. Dr. Nagle, however, adduces the testimony of many gentlemen who formerly served as acting medical officers, to the effect that they were required to wear the uniform; furthermore, he cites a number of official documents in which such persons are spoken of as medical officers. All things considered, it seems to us that he has made out a case strong enough to call for further consideration on the part of the War Department, and we hope that his petition will eventually be granted, and on the ground that an acting medical officer is really an officer.

MINOR PARAGRAPHS.

THE ADIRONDACK SANITARIUM.

We have received the report of Dr. E. L. Trudeau, of the Cottage Sanitarium at Saranac Lake. This is the ninth annual report, and is for the year ending November 1, 1893. The friends of this enterprise have been liberal despite the hard times, and two gentlemen whose names are not given have come forward with a donation in the form of "a five-year laboratory and research fund instituted for the purpose of defraying the laboratory expenses incurred in the study of the specific treatment of tuberculosis, and to meet the expenditure incident to any original researches on this disease undertaken at the sanitarium." This is believed to be the first fund of the kind established in this country. A donation has also been received to build a wing—in memoriam—for the purposes of a library and writing room. The number of admissions in 1893 was a hundred and fifty-six, of which eighty-eight is the number reported on for the year. There were twenty-seven patients treated with modified tuberculin. Thirteen had been discharged, three had been cured, in three the disease had been arrested, two had been improved, and five were unimproved. There was no death. Free treatments for needy patients amounted to a total of three thousand nine hundred and thirty days.

THE INFLUENCE OF ULTRA-VIOLET RAYS ON SMALL-POX.

According to the *Universal Medical Journal* for December, the method of treating small-pox as recommended by Finsen has been successfully employed by Lindholm, of Bergen. The patients were placed in a room from which the ultra-violet rays of light were shut out by red window panes or by covering the windows with red curtains. Twenty cases, of which ten were in unvaccinated children, were treated in this manner with complete success; all the patients recovered, although severely attacked. The eruption dried up shortly after its appearance, there was no fever of maturation, and the patients recovered soon and with but few scars.

A LARGE INFECTIOUS HOSPITAL PLANT.

London has been suffering from an epidemic of scarlet fever, and the existing hospital accommodations have been found wholly inadequate. The total number of beds at the command of the Metropolitan Asylums Board has been 3,300, whereas not fewer than 5,000 beds are needed. Authority having been obtained by the board, it has purchased land, at a cost of $60,000, thirty-three acres in all. Twenty-three acres have been selected for a permanent structure soon to be begun; ten acres will be used during the present emergency for the purposes of temporary buildings large enough to hold 400 beds. This temporary hospital will cost $300,000, and will be almost wholly needed for the scarlatina patients that are sent to hospital from the southwestern parts of London. The cost of maintenance is stated at $50,000 per annum. There will be ninety nurses and assistant nurses. There will be sixteen pavilions, used as wards, each to contain twenty-four beds. The air-space for each bed will be 2,000 cubic feet.

A RICH GIFT TO THE NEWBERRY LIBRARY.

Dr. Nicholas Senn, of Chicago, has given his collection of books to the Newberry Library, of Chicago. It is estimated that $50,000 could not duplicate this collection. It is especially rich in works on surgery, containing, as it does, the collection made by Dr. William Baum, the professor of surgery in the University of Göttingen. This latter library, bought in its entirety by Dr. Senn, when it reached Milwaukee, came to its new owner packed in fifty-two cases, making an entire car-load. The *Journal of the American Medical Association* for December 30th gives us these data, and also states that Mrs. Senn is the prime mover in this action. Knowing the great worth of the collection, and appreciating the almost daily danger that a private residence has of loss by fire or other casualties, she has prompted the professor to put the books in a safe place at all hazards. He weighed the matter carefully and concluded to give his books to the Newberry Library, and thereby place them at the disposal of his medical brethren.

THE INSANE OF KINGS COUNTY.

The new Board of Charities of Kings County has adopted a resolution looking to the transfer of the lunatics under their charge to the State's care. If this step is taken, it will result in the saving of fully $160,000 per annum to the taxpayers, for so long as the lunatics remain as they are there is a double tax to pay, and this is quite contrary to the temper of the times. Action by the Legislature, now in session, will be sought for in order to get remuneration for the costly buildings that must be disposed of in some way if the transfer is to be made.

CAISSON DISEASE.

Four cases of this affection have occurred within the past month, three of which have ended in recovery, in connection with the work on the gas-tunnel under the East River. It is stated that there have been seven fatal cases since the beginning of the work, about twenty months ago.

ITEMS, ETC.

The Philadelphia Polyclinic has arranged to give a week upon the diseases of the heart and lungs, beginning on the 22d inst., the instruction being arranged on a plan similar to that pursued in the recent week devoted to cataract.

The Hoagland Laboratory, Brooklyn.—Dr. E. H. Wilson has been appointed director of the department of bacteriology, in the place of Dr. Sternberg, who resigned on taking office as surgeon general of the army. Dr. S. E. Jelliffe has been appointed librarian.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 9, 1894:

DISEASES.	Week ending Jan. 2.		Week ending Jan. 9.	
	Cases	Deaths.	Cases.	Deaths.
Typhus	0	0	0	0
Typhoid fever	4	3	10	5
Scarlet fever	125	6	96	11
Cerebro-spinal meningitis	0	1	1	2
Measles	293	7	491	29
Diphtheria	213	37	229	55
Small-pox	7	2	12	2

The Johns Hopkins University.—The medical class numbers seventeen, and forty-six medical graduates are attending the post-graduate lectures.

The New York Post-graduate Clinical Society.—The special order for the meeting of the 6th inst. was a paper on Severe Hæmorrhages from the Nose, by Dr. Wolff Freudenthal.

The Home for Consumptives is remembered in the will of the late Stephen Wilcox by a bequest amounting to $10,000.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 24, 1893, to January 6, 1894:*

Hall, John D., Major and Surgeon, by direction of the Secretary of War, is granted leave of absence for two months, to take effect on or about January 15, 1894, with permission to apply for an extension of one month.

Munson, Edward L., First Lieutenant and Assistant Surgeon, is relieved from duty at Jefferson Barracks, Missouri, and will report in person to the commanding officer, Fort Assinniboine, Montana, for duty at that post.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending January 6, 1894.*

Cook, Frank C., Washington, D. C., commissioned an assistant surgeon in the navy January 4, 1894.

Society Meetings for the Coming Week:

Monday, *January 15th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society.

Tuesday, *January 16th:* New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Franklin (annual), Kings (annual), Otsego (semi-annual—Cooperstown), and Westchester, N. Y.; Ogdensburgh, N. Y., Medical Association; Connecticut River Valley Medical Association (Bellows Falls), Vt.; Baltimore Academy of Medicine.

Wednesday, *January 17th:* New York Academy of Medicine (Section in Public Health and Hygiene); Harlem Medical Association of the City of New York; Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society.

Thursday, *January 18th:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *January 19th:* New York Academy of Medicine (Section in Orthopædic Surgery); Baltimore Clinical Society; Chicago Gynæcological Society.

SATURDAY, *January 20th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Answers to Correspondents:

No. 420.—Several years ago an attempt was made to secure the enactment of such a law, but we are quite sure that it failed.

Letters to the Editor.

TRIONAL.

BROOKLYN, *January 1, 1894.*

To the Editor of the New York Medical Journal:

SIR: Trional is the best hypnotic, in my opinion. One year ago my experience with it began, and since then I have given it hundreds of times, with a result so satisfactory that I am impelled to pronounce it, as a soporific pure and simple, without a peer. This opinion is of more than common worth, for it is the outcome of its use under conditions pre-eminently adapted to test the value of any hypnotic—as the agrypnia attending the early abstinence time of narcotic inebriety is only equaled by the insomnia of the insane. It, then, may be deemed certain that its claim to merit is well founded if it serves this purpose in each of these special conditions; and there is a large and enlarging consensus of opinion among alienistic experts that, of all sedative soporifics, trional leads the list.

The most extensive paper in English, and one of the earliest on trional, was read by myself before the Brooklyn Neurological Society on April 12, 1893, in which reference was made to its use a hundred times, with success in ninety instances. This result tallied closely with reports made by foreign physicians, and my success since then has been so satisfactory that I now employ trional to the exclusion of all other soporifics during the time when the need for a powerful hypnotic is most pronounced.

In my paper certain details were noted which need not now be cited, inasmuch as a reprint is at the command of any one having enough interest in the subject to request it.

During the last six months several papers on trional by foreign observers—Beyer, Cainer, Collaz, Garnier, Hammerschlag, Koppers, Randa, and Pelander—have been presented, all adding to the good opinion of earlier observers.

Let it be distinctly understood that trional is *not* an anodyne. A full appreciation of this fact is of prime importance. It has no analgesic power; if pain is present, sleep will not come. This, I fancy—or often an underdose—is the main reason why non-success has been noted by some.

When painful conditions obtain, to combine it with codeine —*codeine, not* morphine—will secure a happy result; or, if the opiate is not needed, phenacetin makes an admirable adjunct

As compared with sulphonal—its nearest rival—the effect of trional is prompter, more pronounced, more prolonged. It is, too, more certain. My experience with sulphonal has made me think it an erratic sort of drug.

Compared with chloral, trional is safer. Chloral has killed, and not infrequently in doses usually deemed safe. I am not aware of any such charge against trional. No anxiety attends my giving it, whereas with chloral, though I have not noted a lethal result, I have never been free from a certain solicitude regarding the outcome of its taking.

Compared with paraldehyde, its effect is more decided and more lasting, and its freedom from the latter's villainous smell and taste is no small advantage. Chloralamide and somnal—in each of which the main factor is chloral—are less potent than trional.

In closing, one point touching this topic is worth noting. Most of those who honor me with their care are medical men. The aggregate experience of these gentlemen regarding the effect of various hypnotics upon themselves is not small, and without exception, save one—a case cited in my paper, in which failure was due less to the drug than to the doctor—they have pronounced trional the most satisfactory soporific they ever used.

J. B. MATTISON, M. D.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS AND GYNÆCOLOGY.

Meeting of December 28, 1893.

Dr. H. J. BOLDT in the Chair.

Absence of Menstruation.—Dr. HUBBARD W. MITCHELL reported the history of a case which presented the following features: The patient, a young woman, twenty-four years of age, came under the speaker's notice first in February, 1892, complaining of approaching insanity, which she was sure would come on, from the fact that she had never menstruated. A thorough physical examination was made, and, with the exception of infantile development of the uterus, the patient was found in every respect in perfect health. Her fears as to her mental condition were allayed, and she had up to the present time continued to act in the capacity of a governess. In October, 1893, she had a molar extracted, and the operation was followed by considerable hæmorrhage from the cavity for some time afterward. At one time the hæmorrhage was so great as to cause unconsciousness and almost exsanguinate the patient. It was almost a month before she had regained her usual health. The condition, the speaker thought, might be one of hæmophilia. Up to the time of the tooth extraction there had been no vicarious menstruation or natural flow, and the patient had enjoyed perfect health. At the present writing she was in good condition and following her usual vocation.

Specimens of Calculi.—Dr. LOCKE presented some specimens of calculi which had been passed by a patient upon whom an operation for suppurating ovarian tumor had been performed a year previously. The patient had improved in health until December, 1893, when she was seized with a severe attack of tenesmus, and finally passed the calculi. The speaker believed them to have formed on silk ligatures acting as nuclei.

Accouchement Forcé.—Dr. S. MARX read a paper on this subject. After reviewing the history of other methods of hastening delivery he described the steps in the operation of *accouchement forcé* as practiced by Dr. Grandin and himself. The operation was divided into two stages, the preparatory and the operative. The first stage might in some cases be omitted, as where the cervix was dilatable or where the os was soft, non-resisting, and boggy, as occurred in placenta prævia. It was especially in this complication that the operation was indicated and was most easily done. The operation having been decided upon, the patient was placed on the back, no anæsthetic being necessary. After thorough asepticism of the vagina, cervical canal, and external genitals, a Sims's speculum was introduced and the anterior or posterior lip was seized with a bullet forceps, and iodoform gauze cut in strips of the width of two fingers was carried in the grasp of a Garrigues's intra-uterine tampon forceps into the cervical canal. The next step was to slowly and gently insinuate the instrument until the gauze was well in the canal or until it met with resistance from the presenting fœtal part, most frequently the head. The canal was then tamponed as completely as possible. The vaginal vault and vagina were tamponed in the usual way and the patient was put to bed. This method of tamponing the cervix was very important, and upon it the success or failure of the operation depended. It had for its objects, first, to separate the membranes mechanically without endangering their integrity; secondly, to materially soften the cervix and cause a marked disappearance of the vaginal portion; thirdly, to provoke uterine pains, and it sometimes gave rise to sufficient uterine action to effect spontaneous delivery. The patients usually complained of intermittent, crampy pain, which indicated uterine action. In from ten to fifteen hours the tampon was to be removed, the patient thoroughly douched, and an anæsthetic given. The os would now be found very soft and dilatable, so as to admit one or two fingers readily, and the hand was to be introduced into the vagina, one finger after the other being gently inserted, until the open hand could be brought up to the cervix. The hand was then to be closed and gently withdrawn. If it was withdrawn rapidly, it was easy to imagine, the uterus might readily be ruptured. The closed hand acted like Tarnier's dilating bags, which were introduced empty into the uterus and slowly withdrawn. After withdrawing the closed fist several times, until no resistance on the part of the cervix was encountered, it would be found that it was sufficiently dilated for the passage of an ordinary child. The membranes having been preserved, version, if indicated, was easily done and the labor terminated. The uterine tampon, in the absence of hæmorrhage or sepsis, was entirely optional with the operator. A number of cases were reported by the speaker in which the advantage of the operation was shown. The cases had not been selected, and the method had been tried faithfully upon women as the indications had happened to present themselves. The rate of mortality had been practically *nil*.

Dr. E. H. Grandin thought that the reader of the paper had formulated very clearly the reasons for such an operation as *accouchement forcé*. As it was eminently a safe procedure, both to the mother and to the child, it surely ought to be given a fair trial until something better was presented. The only objection that could be made to the operation was the danger of rupture but as that was not confined to *accouchement forcé*, but was present in versions and forceps deliveries, it ought not to stand in the way of the employment of the procedure. Out of a series of sixteen cases treated by this method, there had been no deaths of mothers and a loss of only two of the infants. The name indicated force, but, as a matter of fact, no force was used; it was simply a yielding of the muscle to continued pressure. If rupture did occur to the cervix, that could be repaired at once by placing the patient on the back and drawing the cervix down into view, so that the extent of the injury could be accurately appreciated. The cases in which the operation was called for were those of placenta prævia and impending uræmia, and in these grave conditions the speaker's mortality rate had been *nil*. If the cases were treated in a scientific manner, no woman ought to be allowed to die from sepsis. The speaker thought that the treatment of eclampsia with morphine and other drugs was generally bad practice; what was wanted was to empty the uterus as soon as possible and eliminate the poison.

Dr. Malcolm McLean said that he did not understand the term *accouchement forcé* as applied to the operation described by Dr. Marx. He could see nothing in it but induced labor; slow dilatation surely could not be *accouchement forcé*. As for the use of iodoform gauze for packing, he did not see that it had any advantage over the hydrostatic dilators. He thought that in primiparæ it would be found that usually the canal was too small to admit of the introduction of the hand without danger of tearing the cervix, and in these cases he was in favor of using the dilators. It certainly required good judgment on the part of the attending physician as to whether cases were suitable for the operation or not, and, further, no man who was capable of undertaking *accouchement forcé* should have rupture result from his manipulations.

Dr. J. Clifton Edgar said that his experience with the operation had led him to the conclusion that it was a much more serious procedure than was generally supposed, and he would resort to it only where there was imminent danger to mother or child.

Dr. Robert A. Murray did not believe in the feasibility of dilating with the fingers; they were apt to become cramped with the strained position, and, if they were withdrawn to allow of rest, the parts would retract. It might be carried out where one had trained assistants to relieve him, but for his part he preferred to use the dilators, as they had always given satisfaction. Much harm might be done by emptying the uterus too rapidly, as it was often followed by fatal shock.

The Radical Cure of Umbilical Hernia.—Dr. George M. Edebohls demonstrated his method of performing this operation. In true umbilical hernia the opening was round and usually large, from an inch to four inches in diameter, and the surrounding tissue was fibrous. It was for this reason that the operation so frequently failed. The size of the opening, the fibrous structure to deal with, and the enormous tension that must necessarily be brought to bear on the parts to keep them together, had often led to the question, Could there be a radical cure of umbilical hernia? The speaker believed that his method offered the best solution of the difficulty. It would not cure in every case, but the number of cures had been sufficiently large to justify him in the operation. When one considered the liability of these herniæ to injury and inflammation and consequent adhesions, and the danger of their becoming irreducible, he thought that the woman ought to have a chance for her life, and it was certainly offered in his operation. The operation consisted in splitting back a flap on each side of the opening and bringing the surfaces together by means of silkworm-gut suture in such a manner that the surfaces were apposed without puckering them together, as had previously been done. The suture was buried in the part and allowed to remain for an indefinite period. It was to the permanent buried suture, supporting the parts, that the speaker believed the success in his cases had been due. He described four cases of true umbilical hernia. In three of them the operation had been successful; in the fourth recurrence had taken place in twelve months.

Hysterical Manifestations due to Alcohol.—Dr. Henry C. Coe read a paper with this title. Every practitioner, he said, occasionally encountered cases of hysteria of obscure origin, occurring, it might be, in patients who were not previously suspected of being particularly neurotic. Usually a careful review of the history or the discovery of some unusual cause of excitement explained the phenomena satisfactorily, but sometimes the outbreak was so violent as to suggest a different influence. In a certain class of women one was prepared to come in contact with frequent cases of inebriety with unmistakable symptoms, but we were seldom on the lookout for them among highly respectable women. That tippling was a common practice among fashionable women was well known. They resorted to stimulants in order to support the strain incident to their exciting and irregular mode of life. It was seldom that the effect was visible except in an unnatural vivacity, the source of which was suspected only by a practiced eye. It would only be after unwonted indulgence that the old hands would lose control of themselves and display such actions as might readily be mistaken for those of pure hysteria. For, it should be remembered, the stage of exhilaration manifested in men by hilarity, loud talking, confusion of ideas, etc., often found its expression in women in complex phenomena which were included under the head of hysteria. The subjects were usually of a distinctly nervous type. The speaker had found that the cases could be classified under two heads: First, those in which young women, naturally well balanced, unaccustomed to the use of alcohol, took an amount which, for them at least, was excessive. Second, older women of a neurotic type who were accustomed to use spirits more or less freely. Several cases were given in detail to show the peculiar manifestations of an attack of hysteria due to alcohol. The speaker wanted to emphasize the following points: In every case of supposed hysteria to which one was summoned for the first time it was wise to ask if the manifestations might not be directly due to the use of stimulants, either with or without the knowledge of the patient's family. Considerable tact was often necessary in order not to arouse the suspicions of the family, who might be entirely ignorant of her failing. A frank conversation with the patient when she was in her normal condition was more likely to be attended with good result than a hasty and injudicious reprimand at the time. It was important to remember that a small amount of alcohol might be sufficient to upset a woman who was not an habitual tippler. The diagnosis might present great difficulties, especially in the case of a strange patient, or one who gave a previous history of hysteria, particularly at the time of the menstrual period, when so many women used spirits for the relief of dysmenorrhœa. Certain phenomena of true hysteria were usually absent in those who were under the effects of alcohol, such as visceral manifestations, areas of anæsthesia, paralyses, contractures, etc. The patients were not in a condition to practice successfully the various deceptions with which the physician was so familiar. Exaltation was more marked than depression. In regard to the prognosis, the alarmed family could be assured that nothing serious was the matter, but that the patient was suffering from an ordinary nervous attack from which she would speedily recover. The question of her future was a more serious one, to be determined by the frequency of the attacks and her power to control the craving for stimulants and to resist temptation to resort to chloral, morphine, and other drugs. The ordinary treatment of an hysterical attack was useless in the alcoholic cases. The stomach was only upset without relief being produced. If the patient could sleep soundly, she would soon regain her equilibrium, and for this purpose the speaker had found nothing better than the old-fashioned Dover's powder. Morphine hypodermically usually excited the patients much more and made the condition worse. The question of subsequent treatment of such cases was an important one. A sensible woman who had unwittingly overstimulated herself would be so mortified that she would carefully guard against any repetition. The family physician was in a position to exert a strong influence in the right direction. He should not only warn his patients against the pernicious effects of tippling, but discourage the common practice of administering spirits freely to young girls at the menstrual period. Cases of inebriety were clearly traceable to such a practice. It was hardly necessary to add that the physician who prescribed a drink of whisky or brandy for every slight ailment assumed a responsibility only a little less than that taken by the one who gave an injection of morphine under similar circumstances.

Book Notices.

Clinical Gynæcology: being a Handbook of Diseases Peculiar to Women. By Thomas More Madden, M. D., F. R. C. S. Ed., Obstetric Physician and Gynæcologist Mater Misericordiæ Hospital, Dublin, etc. With Two Hundred and Fifty-nine Illustrations. Philadelphia: J. B. Lippincott Company, 1893. Pp. xvi–11 to 562. [Price, $4.]

In the pages of this volume the author has embodied the results of his experience, that extends over a quarter of a century, in diseases peculiar to women. The work, therefore, is an account of what he has personally observed at the bedside, or carried into effect in the treatment of gynæcological cases, and he presents it to the reader in the colloquial form of lectures.

In his opening lecture he says that he will not refer as incessantly as some teachers do to those German and French gynæcologists whose authority is so much relied on in some places; but, if further light is needed as a guide in the often dark and difficult paths of gynæcology, to America he can best turn for guidance, because modern gynæcology unquestionably owes its present development chiefly to the influence and teaching of the American and British schools of medicine.

After describing the instruments and technique necessary for examining patients, the author proceeds to a consideration of the injuries of the perinæum. In his experience, perineal lacerations are less frequent than heretofore, a result that is largely due to abstention from unnecessary interference with the perinæum during the second stage of labor. He prefers Duke's method of perinæorrhaphy, in which a double edged bistoury is made to penetrate the tissues in front of the anus at right angles to the vulva for two inches and a half upward, and as the knife is withdrawn the incision is enlarged laterally to two inches. The patient is changed from the lithotomy posture to a lateral decubitus, and, the points of the incision being pressed together, a lozenge-shaped opening is seen, and the cut surfaces are coaptated and sutured. There is no loss of tissue, no danger of hæmorrhage, and no communication with the vagina or rectum, and we believe that in certain cases this operation will be found as satisfactory as it is ingenious.

The author agrees with Dr. Andrew F. Currier that malignant disease of the vulva offers peculiarly good opportunities for radical treatment, and that it should be oftener resorted to.

He states that his title to priority in the treatment of cystitis by rapid dilatation of the urethra is based on the employment of that procedure as early as 1875, and says he was unaware that it had been suggested by Goodell or any one else. The operation is not uniformly successful, but he has found it of vast benefit in the treatment of a large number of cases of that disease.

Dr. Madden considers that the removal of the uterine appendages for fibromyomata is rarely necessary. Electricity has failed to remove the tumor in any case in which he has employed it. He advocates the usual palliative measures.

He does not regard the abdominal or vaginal extirpation of the cancerous uterus as expedient or justifiable as a general rule of practice; the enormous mortality of the operations suggests the desirability of employing palliative measures for the remainder of the patient's life. She should be allowed to die naturally, not surgically.

In discussing the question of the removal of the appendages he says: "The question of election or necessity I regard as the cardinal point to be decided in considering the expediency of removing the uterine annexa in the treatment of Falloppian-tube disease. In many instances, unquestionably, that course becomes a necessity. It should never be forgotten, however, that in probably a no less large number of cases tubal diseases may also be successfully treated by some of the remedially effectual conservative measures to which reference has been made."

Throughout the text the author shows that he is free from the *furor secandi*, and the broad spirit in which the various topics in gynæcology are discussed, the judicious counsel that is given regarding a choice of procedures, and the sensible conservatism that is so noticeable a feature of the work commend it to the attention of the practitioner as well as the student.

BOOKS, ETC., RECEIVED.

A Treatise on the Medical Jurisprudence of Insanity. By Edward C. Mann, M. D., Author of A Manual of Psychological Medicine. Albany, N. Y.: Matthew Bender, 1893. Pp. xxv–420.

Essentials of Practice of Medicine. Arranged in the Form of Questions and Answers. Prepared especially for Students of Medicine. By Henry Morris, M. D., Late Demonstrator, Jefferson Medical College, Philadelphia, etc. With a very complete Appendix on the Examination of Urine, by Lawrence Wolff, M. D., Demonstrator of Chemistry, Jefferson Medical College. Colored (Vogel) Urine Scale and Numerous Illustrations. Third Edition, revised and enlarged by some Three Hundred Essential Formulæ, selected from the Writings of the most eminent Authorities of the Medical Profession. Collected and arranged by William M. Powell, M. D., Attending Physician to the Mercer House for Invalid Women at Atlantic City, N. J. Philadelphia: W. B. Saunders, 1894. Pp. xv–17 to 374. [Price, $2.] [*Saunders's Question Compends.*]

The Physiology of Death from Traumatic Fever. A Study in Abdominal Surgery. By John D. Malcolm, M. B., C. M., Fellow of the Royal College of Surgeons of Edinburgh, etc. London: J. & A. Churchill, 1893. Pp. iv–129. [Price, 3*s*. 6*d*.]

Syllabus of Lectures on the Practice of Surgery. Arranged in Conformity with the American Text-book of Surgery. By N. Senn, M. D., Ph. D., LL. D. (Chicago), Professor of the Practice of Surgery and Clinical Surgery in Rush Medical College, etc. Philadelphia: W. B. Saunders, 1894. Pp. 6–17 to 221. [Price, $2.]

Manual of Physical Diagnosis. For the Use of Students and Physicians. By James Tyson, M. D., Professor of Clinical Medicine in the University of Pennsylvania, etc. Second Edition, revised and enlarged. Philadelphia: P. Blakiston, Son, & Co., 1893. Pp. xi–9 to 241. [Price, $1.50.]

Myxœdema: and the Effects of Climate on the Disease. By A. Marius Wilson, M. D., B. S. Durh., L. R. C. P. Lond., M. R. C. S. Eng. London: The Scientific Press, Limited, 1894. Pp. 9 to 36. [Price, 2 shillings.]

The Art of Living in Australia (together with Three Hundred Australian Cookery Recipes and Accessory Kitchen Information by Mrs. H. Wicken, Lecturer on Cookery to the Technical College, Sydney). By Philip E. Muskett, Late Surgeon to the Sydney Hospital, etc. London, Edinburgh, Glasgow, Melbourne, Sydney, and New York: Eyre and Spottiswoode, 1893. Pp. xxix–3 to 431.

Die Schwankungen der Reizzustands-Grösse, d. i. der Intensität, bezw. des Umfangs des Lebens im menschlichen Körper. Experimental-Untersuchungen von Dr. K. Francke, Specialarzt für innere Leiden. Mit 93 Abbildungen. Leipsic: Georg Thieme, 1893. Pp. 7–9 to 32. [Preis, M. 15.]

Mechanical Aids in the Treatment of Chronic Forms of Disease. By George H. Taylor, M. D., etc. New York: George W. Rodgers, 1893. Pp. 109.

Microscopical Studies in Pelvic Peritonitis. By Mary A. Dixon Jones, M. D., Brooklyn, N. Y. [Reprinted from the *Medical Record.*]

Carcinoma of the Floor of the Pelvis. By Mary A. Dixon Jones, M. D., Brooklyn, N. Y. [Reprinted from the *Medical Record.*]

Sterility in Woman. Causes, Treatment, and Illustrative Cases. By Mary A. Dixon Jones, M. D. [Reprinted from the *Medical Record.*]

Colpo-hysterectomy for Malignant Disease. Some Considerations in regard to the Operation, Technique, etc. With a Report of my First Five Cases. By Mary A. Dixon Jones, M. D., Brooklyn, N. Y. [Reprinted from the *American Journal of Obstetrics and Diseases of Women and Children.*]

Diagnosis and Some of the Clinical Aspects of Gyroma and Endothelioma of the Ovary. By Mary A. Dixon Jones, M. D., Brooklyn, N. Y. [Reprinted from the *Buffalo Medical and Surgical Journal.*]

Movements of the Upper Eyelid associated with Lateral Movements of the Eyeball. By Dr. Harry Friedenwald, Baltimore, Md. [Reprinted from the *Archives of Ophthalmology.*]

A Few Points of Interest to the Family Physician. By Joseph Eastman, M. D., LL. D., Indianapolis, Ind. Read in the Section of Obstetrics and Diseases of Women, at the Forty-third Annual Meeting of the American Medical Association. [Reprinted from the *Journal of the American Medical Association.*]

Abdominal Surgery and its Evolution and Involution. By Joseph Eastman, M. D., Indianapolis, Ind. [Reprinted from the *Journal of the American Association.*]

Vaginal Extirpation of the Uterus. Forty Consecutive Cases. By Joseph Eastman, M. D., Indianapolis, Ind. [Reprinted from the *Medical Record.*]

Studies and Methods in Suprapubic Hysterectomy. By Joseph Eastman, M. D., Indianapolis, Ind. [Reprinted from the *North American Practitioner.*]

Artificial Opening of Pulmonary Cavities, Insertion of Rubber Tube, and Injection of Chlorine Gas. By E. L. Shurly, M. D., Detroit, Mich. [Reprinted from the *Journal of the American Medical Association.*

Medicine as a Career for Educated Men. The Commencement Address at Lafayette College, June 13, 1893. By William W. Keen, M. D., Philadelphia.

Habits of Posture a Cause of Deformity and Displacement of the Uterus. By Eliza M. Mosher, M. D., Brooklyn, N. Y. [Reprinted from the *New York Journal of Gynæcology and Obstetrics.*]

Appendicitis: A Personal Experience. By Howard Crutcher, M. D., Chicago. [Reprinted from the *Journal of Orificial Surgery.*]

Glycosuria as an Additional Symptom indicating the Neurotic Origin of Dermatitis Herpetiformis (Duhring). By James McF. Winfield, M. D. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases.*]

On the Microbic Origin of Chorea. Report of a Case, with Autopsy. By Charles L. Dana, A. M., M. D. [Reprinted from the *American Journal of the Medical Sciences.*]

Mensuration in the Physical Diagnosis of Pulmonary Phthisis. By George A. Evans, M. D. [Reprinted from the *Brooklyn Medical Journal.*]

Supravaginal Hysterectomy without Ligature of the Cervix, in Operation for Uterine Fibroids. A New Method. Cases of Chronic Ovarian Abscess, illustrating the Danger of Delay in their Proper Management. Drainage in Abdominal Surgery; its Unnecessary and Excessive Use. By B. F. Baer, M. D., Philadelphia. [Reprinted from the *Transactions of the American Gynæcological Society and the Philadelphia Polyclinic.*]

A Supplementary Paper upon Supravaginal Hysterectomy by the New Method, with Report of Additional Cases. By F. Baer, M. D., Philadelphia. [Reprinted from the *Transactions of the American Gynæcological Society.*]

What are the Indications for Abdominal Section in Intrapelvic Hæmorrhage? By Marcus Rosenwasser, M. D., Cleveland, Ohio. [Reprinted from the *Transactions of the American Association of Obstetricians and Gynæcologists.*]

On Arsenical Paralysis. By S. E. Henschen. With One Plate. (Presented to the Royal Society of Sciences of Upsala, September 30, 1893.)

Apparatus for Recording the Curve of Rotation in Scoliosis. By L. A. Weigel, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

Horsehair in Minor Surgery. By C. O. Thompson, M. D., Boston. [Reprinted from the *Boston Medical and Surgical Journal.*]

A New Pathology and Treatment of Nervous Catarrh. By Seth Scott Bishop, M. D., Chicago. [Reprinted from the *Journal of the American Medical Association.*]

Two Cases of Laryngeal Neoplasms. By Robert Levy, M.D. [Reprinted from the *Journal of the American Medical Association.*]

Fifth Annual Report of the Health Department of Mansfield, Ohio. 1892 to 1893.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland. Ninety-fifth Annual Session, held at Baltimore, Md., April, 1893. Also Semi-annual Session, held at Easton, Md., November, 1892.

A Manual of Practical Hygiene, designed for Sanitary and Health Officers, Practitioners, and Students of Medicine. By W. M. L. Coplin, M. D., Adjunct Professor of Hygiene, Demonstrator of Pathology, and Curator of the Museum, Jefferson Medical College, etc., and D. Bevan, M. D., Instructor in Hygiene and Clinical Microscopy, Jefferson Medical College, etc. With an Introduction by H. A. Hare, M. D., Professor of Therapeutics, Materia Medica, and Hygiene in Jefferson Medical College, Philadelphia. With One Hundred and Forty Illustrations, many of which are printed in Colors. Philadelphia: P. Blakiston, Son, & Co., 1893. Pp. xvi–25 to 456. [Price, $4.]

An American Text-book of Gynæcology, Medical and Surgical, for Practitioners and Students. By Henry T. Byford, M. D., J. M. Baldy, M. D., Edwin B. Cragin, M. D., J. H. Etheridge, M. D., William Goodell, M. D., Howard A. Kelly, M. D., Florian Krug, M. D., E. E. Montgomery, M. D., William R. Pryor, M. D., George M. Tuttle, M. D. Edited by J. M. Baldy, M. D. With Three Hundred and Sixty Illustrations in Text, and Thirty-seven Colored and Half-tone Plates. Philadelphia: W. B. Saunders, 1894. Pp. xxiv–17 to 713. [Price, $6.00.]

The Healing of Rodent Cancer by Electricity. By J. Inglis-Parsons, M. D., M. R. C. S., M. R. C. P. (Lond.), etc. London: John Bale & Sons, 1893. Pp. vii–82. [Price, 5 shillings.]

Twelfth Annual Report of the State Board of Health of New York. Transmitted to the Legislature, February, 1892.

Thirteenth Annual Report of the State Board of Health of New York. Transmitted to the Legislature, March 9, 1893.

Maps to accompany the Thirteenth Annual Report of the State Board of Health of New York. Transmitted to the Legislature, March 9, 1893.

Suicide and Insanity: a Physiological and Sociological Study. By S. A. K. Strahan, M. D., Barrister-at-Law, Member of the Honorable Society of the Middle Temple, etc. London: Swan, Sonnenschein, & Co., 1893. [Price, $1.75.]

Intubation in Laryngeal Stenosis caused by Diphtheria. By Joseph P. O'Dwyer, M. D. [Reprinted from the *American Lancet.*]

Perineo-vaginal Restoration. By Edward W. Jenks, M. D., Detroit, Mich. [Reprinted from the *American Journal of Obstetrics.*]

The Limits and Requirements of Gynæcology. By Edward W. Jenks, M. D., Detroit, Mich. [Reprinted from the *Medical Record.*]

Pharyngites hémorrhagiques. Par le Dr. Marcel Natier, Chef du service du nez, des oreilles et du larynx de la Policlinique de Paris. [Extrait de la *Revue internationale de rhinologie, otologie et laryngologie.*]

Miscellany.

The Treatment of Whooping-cough.—Dr. H. Méry contributes to the *Gazette médicale de Paris* for December 9th an article of which the following is the substance: There is no specific treatment for whooping-cough; the multiplicity of plans of treatment recommended testifies to the restricted extent of their value. Without professing to recount them all, we may divide them into several great groups, each, as a rule, founded upon the pathogeny of the disease. Accordingly, the abundance of antispasmodic plans of treatment springs from the nervous theory of whooping-cough, which was for a long time the only one entertained; with the theory of infection came attempts at general and local antiseptic treatment; with the theory that designates a reflex starting from the mucous membrane as the cause of whooping-cough came nasal insufflations of powders, recently in vogue. At the outset the plans of treatment may be divided into the general (internal medication) and the local (by sprays, paintings of the throat, and nasal insufflations). As regards internal medication, there are two great groups of medicaments. The first consists of the antispasmodics, including belladonna and its derivatives, so vaunted by Trousseau, antipyrine, potassium bromide, opium, codeine, chloral, and syrup of ether. The second consists of antiseptic drugs, such as quinine sulphate, carbolic acid, and bromoform. Some of these, such as carbolic acid, act in addition as calmatives. Certain other drugs that it is not easy to class in either of these two groups have been employed in whooping-cough. Among these are tincture of drosera, oxymel of squill, and terpene, which are specially intended to subdue the catarrhal elements of the third stage. In the local treatment calmatives and antiseptics have been used to about the same extent. Chief among them are spraying with salicylate of sodium, with carbolic acid, or with resorcin, inhalations of chloroform or ether, applications of cocaine to the pharynx, applications of resorcin within the larynx, and, finally, insufflations of powders into the nasal fossæ. The author then alludes to the occasional success of vaccination in arresting the course of whooping-cough.

In the presence of a case of confirmed whooping-cough, he says, the following advice may be given: As regards internal medication, the preference should be accorded to antipyrine. Most authors advise the administration daily of about a grain and a half for each year of the patient's age, but the author is of the opinion, with Sevestre, that this amount is too small; antipyrine should be used in whooping-cough in daily amounts of fifteen, thirty, or forty-five grains, as in chorea. In children over two years old doses of eight grains may be given, repeated three, four, or five times or more, according to circumstances; in those under two years old the doses should be only three grains, repeated two or three times a day; in children under a year old the daily quantity need not exceed eight grains. If the maximum doses mentioned are given, the child must be watched closely. As a consequence of the administration of antipyrine a decided amelioration of the number and violence of the paroxysms will generally be seen to occur; at the end of a few days, when this amelioration has taken place, the use of antipyrine must be suspended, and it may be resumed after several days of rest. If the use of antipyrine is continued uninterruptedly, it ceases to have any effect at the end of a certain length of time. By suspending it, however, one has the advantage throughout the whole duration of the disease of a trustworthy remedy. While antipyrine is accorded the first place as a remedy, we must have at our disposal other drugs capable of supplementing it, especially at the times when we are obliged to suspend its use. Among these is belladonna, especially neutral atropine sulphate in a solution of 1 to 1,000. This solution should be used in small doses at first, beginning with one or two drops, and the daily amounts are to be increased very carefully up to six drops for children over a year old. This treatment gives rise to a few accidents, so it is necessary to keep watch of the pupils and discontinue the use of the remedy and diminish the doses if there is contraction of the pupils. Tincture of drosera, in daily amounts of from twelve to thirty drops, sometimes gives good results, and it also may take the place of antipyrine. In a disease of such long duration and one against which there is no specific we must have a number of drugs with which we can ring the changes when one or another of them shows itself inactive. We can hardly abbreviate the duration of an attack of whooping-cough, so our only function is that of mitigating its intensity. Bromoform at present has a great reputation in Germany, and has been employed successfully in France by M. Huchard. Unfortunately, this drug has several times given rise to accidents and even to death, so that the author hesitates to recommend it. It is used in doses of from two to four drops three times a day, according to the patient's age.

In regard to local treatment, the author considers that in general it is not to be resorted to unless the internal treatment proves inadequate; if the paroxysms are exceedingly violent, one may resort to penciling the pharynx twice a day with a solution of one part of cocaine hydrochloride in twenty parts of water. It is best to abstain from irrtiating the throat with other local applications, and, moreover, up to the present time they have not yielded results superior to those of other methods of treatment. Spraying with various solutions—such as those of carbolic acid, sodium salicylate, and resorcin—may be employed too, but only as accessory measures.

The treatment at the time of a paroxysm requires that the child should be made to sit down with its head held in the hand. Sometimes, especially in very young children, it is necessary to provoke artificially the expulsion of mucus that accumulates in the lower part of the throat. If the paroxysms are very prolonged and if there is a tendency to convulsions, inhalations of chloroform or ether should be employed at the onset of each paroxysm. Very violent paroxysms may threaten suffocation or fainting; in either case artificial respiration should be resorted to.

The question of whether or not children affected with whooping-cough should be allowed to go outdoors has been much discussed. M. Sevestre thinks that it should be answered in the negative as regards cases of the disease that are at all serious; but in cases of a light attack, especially in summer, one need not be so severe. The slightest bronchial inflammation, however, should cause us to forbid the patient's going out, no matter what the weather may be. It is too often the case that the frequency of the paroxysms increases after going out. The diet of whooping-cough patients demands a good deal of attention. If the paroxysms cause the food to be vomited, we should try to arrest them by giving eight grains of potassium bromide half an hour before the meal and from one to three grains of menthol at the conclusion of the meal, in alcoholic solution. Moreover, the food should be solid and of a nature to be assimilated rapidly. It should be given immediately after a paroxysm. Thus the child will be able to take a number of little meals in the course of the day. When, by reason of the measures mentioned, the whooping-cough is plainly on the decline, change of air may lead to its rapid and sudden cessation. But the important thing is not to advise this measure too early. The catarrhal element which accompanies whooping-cough, especially toward the end, has its special indications. Ipecac may be used when there is an excessive accumulation of secretions in the bronchial tubes, also oxymel of squill. The dilatation of the bronchi and the chronic catarrh which follow grave cases of whooping-cough are to be treated with terpene, eucalyptus, etc. At this stage also good results are obtained by the use of baths of compressed air. Finally, some prophylactic treatment should be followed as in the other infectious diseases, especially if there are other young children in the family. The prevention of whooping cough is another object to be gained by not allowing patients to go out; the public gardens of Paris, where numerous children meet, are indeed the most frequent scenes of the propagation of this disease.

The Great Medical Error of the Day.—In an article with this title, published in the January number of the *University Medical Magazine*, Dr. William Goodell, of Philadelphia, says:

"In the treatment of the diseases of women at the present time there seems to me to be a tendency to lay too much stress upon lesions of the reproductive organs. Too little heed is therefore given to the nerve element of woman's diseases, and as a natural sequence the surgical feelers and antennæ of the medical profession, always too keenly sensitive, vibrate vehemently at the approach of an ailing woman. This trend of the profession, to appeal to the knife as the great panacea for woman's diseases, is seen everywhere. It prevails alike in city, town, village, and hamlet. It asserts itself in every medical discussion, and stands out in bold relief upon the pages of every medical journal. It has caused many needless sexual mutilations and unnecessary operations, and it is, in my opinion, the great medical error of the day.

"It comes, not so much from the glamour surrounding surgery, nor from the greed of gold, but from errors of judgment and from mistaken diagnosis. These arise from the fact that woman, through her sensitive and emotional organization, is a bundle of contradictions. More pitiful than man, and more long-suffering, her anger is more cruel, and her jealousy more relentless. Feebler than man, an appeal to her affection will make her surpass him in sheer muscular endurance. Who can nurse her kin so untiringly and with so little rest as even a frail woman can? What father can equal a mother in fondling and soothing a sick and fretful child through the weary night watches? What man can undergo the sheer fatigue, the strain and stress that a woman will for those she loves? Even in her pleasures, her physical amusements, she will, through keen enjoyment, often outtire the strongest man. In one word, she is a creature of impulse and of emotion. But all nerve strains, whether arising from the emotions, from the affections, or from the passions, have their reactions, and very strange and very misleading reflexes come from the loss of brain control over insubordinate lower nerve centers. For what is hysteria but nerve misrule and the panic of the brain at incompetent control? The secret and sanctity of woman's inner life lies in her affections, and what disturbs them disturbs the nerves, and through them their environment of flesh and blood. These unruly nerve lights flashing and fading at their own will, and without control in the different organs of the body, the most careless observer may sometimes plainly see, for the clew is then as secure as the steps of a geometrical problem. But then again the symptoms are more frequently obscure. Often they are as misleading as the lapwing's flight. To construe such symptoms, to unfold their sense, and to paraphrase them, so as to gain a true conception of their character, often demands a deep acquaintance with human life and a keen insight into the most secret springs of its action. . . .

"Nerve strain, or nerve exhaustion, comes largely from the frets, the griefs, the jealousies, the worries, the bustles, the carks and cares of life. Yet, strangely enough, the most common symptoms of this form of nerve disorder in women are the very ones which lay tradition and dogmatic empiricism attribute to ailments of the womb. They are, in the usual order of their frequency, *great weariness*, and more or less of *nervousness*, and of *wakefulness;* inability to walk any distance and a bearing-down feeling; then headache, napeache, and backache. Next comes scant, or painful, or delayed, or suppressed menstruation; cold feet and an irritable bladder; general spinal and pelvic soreness and *pain in one ovary*, usually the left, or in both ovaries. The sense of exhaustion is a remarkable one; the woman is always tired; she spends the day tired, she goes to bed tired, and she wakes up tired; often, indeed, more tired than when she fell asleep. She sighs a great deal, she has low spirits, and she often fancies that she will lose her mind. Her arms and legs become numb so frequently that she fears palsy or paralysis. Nor does the skin escape the general sympathy. It becomes dry, harsh, and scurfy, and pigmentary deposits appear under the eyes, around the nipples, and on the chin and forehead. Blondes are likely to get a mottled complexion, and brunettes to be disfigured by brown patches or by general bronzing. Sometimes the whole complexion changes to a darker hue, and an abnormal and a disfiguring growth of hair appears on the face. There are many other symptoms of nerve strain, but since they are not so distinctly uterine in expression, and therefore not so misleading, I shall not enumerate them.

"Now, let a nervous woman, with some of the foregoing symptoms, recount them to a female friend, and she will be told she has 'womb disease.' Let her consult a physician, and he, especially if she has backache, bearing-down feelings, an irritable bladder, and pain in the ovaries, will assert the same thing, and will diligently hunt for some uterine lesion. If one be found, no matter how trifling, he will attach to it undue importance, and treat it heroically as the erring organ. If no visible or tangible disease of the sexual organs be discoverable, he will lay the blame on the invisible endometrium, or on the unseeable ovaries, and continue the local treatment. In any event, whatever the inlook or the outlook, a local treatment more or less severe is bound to be the issue.

"Yet these very exacting symptoms may be due *wholly* to nerve strain, or (what is synonymous) to loss of brain control over the lower nerve centers, and not to direct or to reflex action from some supposed uterine disorder. Neither, for the matter of that, may it come from some real, tangible, and visible uterine lesion which positively exists. Thus it happens that a harmless anteflexion, a trifling leucorrhœa, a slight displacement of the womb, a small tear of the cervix, an insignificant rent of the perinæum, or, what is always present, an ovarian ache, each plays the part of the will-o'-the-wisp to allure the physician from the bottom factor. To these paltry lesions—because they are visible, palpable, and ponderable, and because he has, by education and by tradition, a uterine bias—he attributes all his patient's troubles; whereas a greater and subtler force, the invisible, the impalpable, and the imponderable nervous system, may be the sole delinquent. The sufferer may be a jilted maiden, a bereaved mother, a grieving widow, or a neglected wife, and all her uterine symptoms—yes, every one of them—may be the outcome of her sorrows, and not the outcome of her local lesions. She is suffering from a sore brain, and not from a sore womb. . . .

"Strange as it may seem, the coccygeal joint is very liable to play the barometer to any kind of mental worry. The serious surgical blunder is, therefore, not infrequently made of extirpating for sheer hysterical coccygodynia this important bone, important from its muscular origins and insertions. I have known coccygodynia to attack a lady after the death of her mother. Every kind of treatment failed, but it was finally abruptly cured by her great resentment at the second marriage of her father. . . .

"Sometimes in these cases an operation acts the part of an incantation. The dread of the knife, and the shock of the operation, distract the mental attitude of morbid concentration; while the enforced rest in bed gives a chance to the worn-out brain to regain strength, and to assert its supremacy over the mutinous lower nerve centers. This leads me to think that in a large majority of operations upon trifling tears of the cervix, and on incomplete lacerations of the perinæum, the good which may accrue comes less from the repair of those organs than from the mental distraction and the enforced rest. But this kind of incantation—the surgical variety—does not always work well; indeed, it often, very often, makes matters worse One striking example was that of a lady who saw her only child run over and beheaded by a locomotive. Her health began at once to fail, and she took to her back with the hackneyed symptoms of weariness, wakefulness, a bearing down, an irritable bladder, and many other canonical uterine reflexes. These were attributed by an excellent and a conscientious physician to a torn cervix and to a torn perinæum, which were accordingly repaired. But the added shock of the two operations made her very much worse. For these reasons, I must confess to becoming far less inclined than formerly to operate on trifling lesions of the reproductive organs, and especially on small tears of the perinæum, the repair of which is painful, unnerving, and generally of doubtful expediency. I have become very skeptical of the influence of such lesions upon the general health, and have come to the belief that, even in bad cases, it is greatly overrated. In my experience, the mistake usually made in these cases is that of attributing to the lacerations the mock uterine symptoms of nerve prostration. About this there can be no error, for I have over and over again, without any surgical treatment whatever, cured of all their ailments patients who had been sent to me for the very purpose of undergoing some operation on the womb, on the perinæum, or even on the ovaries themselves.

"Just as headache does not necessarily mean brain disease, so ovary-ache, groin-ache, and backache do not necessarily mean ovarian disease. Nerve strain and these aches are, it is true, correlatives, but the middle term which connects them is merely a disturbance in the circulation. Yet time and again —and I say this deliberately—have ladies been sent to me to have their ovaries taken out, when the whole mischief had started from some mental worry. Their ovaries were sound, but their nerves were not, and no operation was needed for their recovery. The physician of the present day is too apt to jump from any distinctly female ache to an ovarian conclusion without the delay of any misgivings. The ache is in the back, then, he argues, it probably is ovarian; it is in the groin, then, of course, it is ovarian; it is in the head, but extremes meet, and surely it comes from the ovaries. I, indeed, have seen a painful nose, and also a red one, attributed to the ovaries and treated canonically by the hot vaginal douche and uterine applications. From this widespread bias and pernicious haste the removal of the ovaries has degenerated into a busy industry by which, in city and in country, very many women have been and are being mutilated, both needlessly and on the slightest provocation.

"So misleading, indeed, are the symptoms of a jaded brain or of other nerve strain, under the uterine guise in which they often masquerade, that when a jilted girl, a bereaved mother, or a grieving wife consults a physician, he, unless on his guard, will be more likely to minister to a womb diseased than to a mind diseased. Such cases, even when associated with actual uterine disease, are not bettered by a merely local treatment. Nor are medicines by themselves of much avail. What they need are the incantations of the rest cure—viz., massage, electricity, and strict seclusion. Hope should be infused into every case, and, above all, there should be imported into it the personality of the physician. The riper my experience, the more am I convinced that, in the treatment of woman's diseases, the possibility of a nerve origin or of a nerve complication should be the *fore*-thought and not the *hind*-thought of the physician."

A Second Laura Bridgman; Helen Keller.—Miss Helen Keller, about whom we have heard from time to time, is now thirteen or fourteen years of age. She became deaf, dumb, and blind in infancy, and yet she has been educated up to such a point that she was enabled, at twelve years of age, to write, by means of her own typewriter, a sketch of her having been led forth from darkness into the light of knowledge. Her sketch is beautifully composed, and is said by the editor of the *Youth's Companion*, in which paper the composition has been published, to be free from errors of spelling and the like. Her diction is refined and graceful, she makes occasional reference to her readings of the poets, and she is filled with gratitude and loyalty to those who have educated her and taught her to read and write and make use of oral speech. Not only this, but this little lady is engaged in the good work of collecting a fund for the education of an afflicted deaf-mute—Thomas Stringer, of Pittsburgh.

This autobiographical sketch of a rescued intellect may with profit be perused by every physician in the land—we know of no other single profession or walk in life that can more fully appreciate the struggle against and the victory over deaf-mute blindness. The following paragraph, all that we can here quote, recites how this little deaf-mute made the acquaintance of old Neptune. She had probably never before received a particle of harsh treatment; but old Ocean was positively rude. She says:

"Suddenly we stopped, and I knew, without being told, the sea was at my feet. I knew, too, it was immense! awful! and for a moment some of the sunshine seemed to have gone out of the day. But I do not think I was afraid; for later, when I had put on my bathing suit, and the little waves ran up on the beach and kissed my feet, I shouted for joy, and plunged fearlessly into the surf. But, unfortunately, I struck my foot on a rock, and fell forward into the cold water.

"Then a strange, fearful sense of danger terrified me. The salt water filled my eyes and took away my breath, and a great wave threw me up on the beach as easily as if I had been a little pebble. For several days after that I was very timid and could hardly be persuaded to go into the water at all; but by degrees my courage returned, and almost before the summer was over I thought it the greatest fun to be tossed about by the sea waves.

"Oh, the happy, happy hours I spent, hunting the wonderful shells! How pretty they were with their lovely, fresh hues and exquisite shapes! And how pleasant it was to sit on the sandy bank and braid the sea grass, while teacher told me stories of the sea and described, in simple words that I could understand, the majestic ocean and the ships that drifted in the distance like white-winged birds!

"People sometimes seem surprised that I love the ocean when I can not see it. But I do not think it is strange. It is because God has planted the love of his wonderful works deep in the hearts of his children, and, whether we see them or not, we feel everywhere their beauty and mystery enfolding us."

She tells in another part of her story of her great grief in the loss, by accidental death, of her pet mastiff, Lioness, but admits that it turned her attention to the doing good to another forlorn deaf-mute blind boy, Thomas Stringer, of Pittsburgh. She made use of the money sent her to buy a new pet to help defray the cost of education, at Mr. Anagnos's school at Boston, of "my little human plantlet," as she styles the adopted boy. This little girl is already worthy to be enrolled in the regiment of philanthropists, although she has only recently entered upon her fourteenth year. It is pleasant to know that her appeals for money for her Stringer fund have met with a loving response from people who have speech and hearing and sight and the ability to earn money.

The Medical Society of the State of New York will hold its eighty-eighth annual meeting in Albany on Tuesday, Wednesday, and Thursday, February 6th, 7th, and 8th, under the presidency of Dr. Herman Bendell, of Albany. The provisional programme includes the following titles: The president's inaugural address; Hæmorrhagic Serous Effusion of the Pleura, with Report of a Unique Case, by Dr. William S. Cheesman, of Auburn; Researches on the Eliminating Power of Diseases, and the Relation between Vaccinia and Enteric Fever, by Dr. William Finder, of Troy; Pneumonia of the Aged, by Dr. John H. Pryor, of Buffalo; The Diagnosis and Nomenclature of Fevers, by Dr. Nelson G. Richmond, of Fredonia; The Therapeutics of Oxygen, by Dr. Arnold W. Catlin, of Brooklyn; Simple Methods in the Diagnosis of Nervous Diseases, by Dr. E. C. Spitzka, of New York; discussion on diphtheria, arranged by Dr. A. Walter Suiter; Pathology—Status Præsens, by Dr. Thomas E. Satterthwaite, of New York; Observations on Diagnosis, and some Sanitary Aspects, by Dr. A. Walter Suiter, of Herkimer; Croup and Diphtheria—Unity or Duality, by Dr. William H. Daly, of Pittsburgh, Pa.; The Comparative Status of Intubation of the Larynx, by Dr. Joseph O'Dwyer, of New York; Complicated Intubation of the Larynx, by Dr. William Hailes, of Albany; The Local Treatment, by Dr. Abraham Jacobi, of New York; The General Treatment, by Dr. Edward F. Brush, of Mount Vernon; The Use of Tartar Emetic in Diphtheria, by Dr. H. DeV. Pratt, of Elmira; The Treatment of Depressions in the Skull of the New-born, by Dr. David D. Jennings, of New York; Immediate Trachelorrhapy, by Dr. Henry C. Coe, of New York; Lymphadenoma of the Uterus, by Dr. H. J. Boldt, of New York; Senile Endometritis, by Dr. A. J. C. Skene, of Brooklyn; The Treatment of Endometritis, by Dr. Herman E. Hayd, of Buffalo; Nine Years' Experience with Alexander's Operation for shortening the Round Ligaments of the Uterus, by Dr. Paul F. Mundé, of New York; Pelvic Abscess, by Dr. Walter B. Chase, of Brooklyn; A Case of Hysterectomy for Retention of the Menses, by Dr. William Gardner, of Montreal; a discussion, arranged by Dr. Andrew F. Currier, of New York, on Menstruation and its Abnormities; Dysmenorrhœa—Its Causes and its Treatment, by Dr. Howard Kelly, of Baltimore; Profuse Menstruation, by Dr. Charles P. Noble, of Philadelphia; Scanty Menstruation, by Dr. Franklin Townsend, Jr., of Albany; Irregular Menstruation, by Dr. Charles A. L. Reed, of Cincinnati, and Dr. E. W. Cushing, of Boston; The Menopause—Natural and Artificial, by Dr. Arthur W. Johnstone, of Cincinnati; Urethral Caruncles, by Dr. Edward M. Liell, of New York; The Physical Causes of Sexual Debility in the Male, as distinguished from the Psychical Causes, by Dr. F. R. Sturgis, of New York; The Surgical Treatment of the Prostate Gland, by Dr. Seneca D. Powell, of New York; The Fable of the Egg, by Dr. William S. Ely, of Rochester; Artificial Immunity, by Dr. Henry R. Hopkins, of Buffalo; Clinical Notes on Psoriasis, with Special Reference to its Prognosis and Treatment, by Dr. L. Duncan Bulkley, of New York; Spinal Supports and Braces, by Dr. A. M. Phelps, of New York; The Histology and Pathology of the Spinal Cord, by Dr. William C. Krauss, of Buffalo; a discussion on Abdominal Surgery, by Dr. A. Vander Veer, of Albany; Disputed Points in Pelvic Surgery, by Dr. Joseph Price, of Philadelphia; Influences Affecting the Results of Abdominal Operation, by Dr. J. F. W. Ross, of Toronto, Canada; Hæmorrhage after Abdominal Section—Its place in Statistics, by Dr. A. H. Buckmaster, of New York; Cysts of the Epigastrium, by Dr. Dudley P. Allen, of Cleveland, Ohio; The Technique of the Abdominal Incision—Methods of its Closure and its Subsequent Management, by Dr. W. W. Potter, of Buffalo; An Operative Procedure for the Relief of Obstruction of the Common Duct, by Dr. W. E. B. Davis, of Birmingham, Ala.; Two Cholecystotomies for Gallstones, with Recovery, with Remarks on Operative Methods, based upon Five Cases, by Dr. William Wotkyns Seymour, of Troy; Gallstones the Exciting Cause of Malignant Disease, by Dr. Rufus B. Hall, of Cincinnati; Appendicitis, by Dr. Charles McBurney, of New York; An Analysis of One Hundred and Fifty Personally Observed Cases of Appendicitis, by Dr. George Ryerson Fowler, of Brooklyn; A Conservative View of the Treatment of Appendicitis, by Dr. William S. Tremain, of Buffalo; Some Observations Relative to the Treatment of Suppurative Appendicitis, with Report of Cases, by Dr. Willis G. Macdonald, of Albany; Palpation of the Vermiform Appendix, by Dr. J. M. Edebohls, of New York; The Inch-and-a-half Incision and Week-and-a-half Confinement in Appendicitis, by Dr. Robert T. Morris, of New York; Report of a Case of Post-peritoneal Abscess from Duodenal Ulcer, with Presentation of Specimen, by Dr. L. S. Pilcher, of Brooklyn; Intestinal Perforation in Strangulated Hernia, by Dr. William B. DeGarmo, of New York; Remarks on the After-treatment of Abdominal Section, by Dr. Carlton C. Frederick, of Buffalo; The Unexpected as Sometimes Observed in Abdominal Surgery, by Dr. A. Vander Veer, of Albany; Recent Methods of Gastrostomy for Stricture of the Œsophagus, by Dr. Willy Meyer, of New York; The Influence of Physiological Rest on Prolapse of the Rectum, by Dr. Joseph D. Bryant, of New York; A Contribution to the Subject of Excision of the Larynx, by Dr. Charles A. Powers, of New York; Observations on One Hundred and Eighteen Cases of Cancer of the Breast, with Special Reference to its Radical Cure by Operation, by Dr. William T. Bull, of New York; The Treatment of Hernia (supplement to a paper read last year), by Dr. Alexander Dallas, of New York; Some Cases of Brain Surgery, by Dr. Herman Mynter, of Buffalo; The Needlessness of a Mydriatic in Adjusting Glasses to the Eye, by Dr. D. B. St. John Roosa, of New York; The Action of Scopolamine on the Eye, by Dr. Thomas R. Pooley, of New York; The Treatment of Nasal Hæmorrhage, by Dr. John O. Roe, of Rochester; Report of a Case of Injury to the Cauda Equina, by Dr. Hermon C. Gordinier, of Troy; The Treatment and Prevention of Epilepsy in the Young, by Dr. Græme M. Hammond, of New York; The Practical Workings of the Law for the Care of the Insane, by Dr. Carlos F. MacDonald, of New York; Lunatics in Public Places, by Dr. Wallace J. Herriman, of Rochester; The Subfrontal Gyre (Broca's Convolution) in Man and Apes, by Dr. Burt G. Wilder, of Ithaca; Acromegaly, by Dr. Floyd S. Crego, of Buffalo; Report of a Case of Acromegaly, with the Exhibition of the Subject, by Dr. Frederick Remington, of Rochester; Uræmic Hemiplegia, by Dr. Reynold W. Wilcox, of New York; and Glycosuria, by Dr. W. B. Vanderpoel, of New York.

Revulsive Treatment.—In the *Gazette médicale de Nantes* for December 12, 1893, Dr. Bonamy writes substantially as follows: Sad may be the consequences of the skepticism which tends to take possession of the rising generation of medical men as to the value of the old therapeutic agencies. This skepticism, it is true, has raised up a deep faith in the promises of the microbic school, partly pertaining to preventive hygiene, but having more or less connection with the domain of therapeutics. Among the old measures that are accounted as out of date there is one against which a special revolt has been made—namely, the revulsive. Its effects—pain, redness, and cutaneous burning—it may be well to ignore, if, as is said in the aphorism by which revulsion is defined: *Duobus laboribus simul obortis vehementior obscurat alterum.* The author adds that his personal experience in rheumatism warrants him in subscribing to this way of putting it, for he has oftentimes had occasion to regret the application of a mustard plaster to the painful part. On the other hand, he asks, is there not sometimes an advantage in the revulsion produced by eczema supervening in a gouty, asthmatic, or emphysematous subject? He then cites Professor Brocq, the dermatologist, as affirming that by treating eczema too energetically we may bring about the most serious pulmonary or cerebral congestion. May not this same thing happen, he asks, if we arrest too suddenly the eruptions of lichen or impetigo, which, according to Vogel, that sagacious observer of infantile diseases, make their appearance with the first tooth, are somewhat persistent, and disappear only to appear again at the time of a fresh eruption of teeth? The author says that he has seen fatal accidents follow very closely upon retrocession of these rashes in infancy. So much, he says, for pathological revulsion; as regards therapeutic revulsives, especially the blister, how, he asks, can we disregard the testimony of Bouillaud, renowned for his minute exactness in the observation of facts, when he declares that he would rather disbelieve that it was daylight at noon than distrust the efficacy of blisters in acute diseases of the chest? Does not congestion always exist, the author asks, more or less pronounced, at the situation of the hepatized areas, and may we not repeat, with some reason, what Peter said of tuberculosis of the same organ: "Congestion, then, is the enemy; and one of the best weapons against it is the blister"? He goes on to say that the usefulness of blisters has appeared to him certain in the course of recent epidemics of influenza complicated with broncho-pneumonia of a hæmorrhagic character. He then quotes from Maurice Raynaud as follows: "Should we not be violating all the rules of philosophical induction if we were to admit, as everybody now admits, that an impression of cold on the skin might give rise to a visceral congestion, and at the same time deny that a different impression upon the point of the cutaneous envelope could in turn produce an effect the reverse of the first?" Further proof is furnished by the results of experimentation. Zuelzer, cited by Guès (Jaccoud's *Diction-*

naire), applied cantharidal preparations for several days to the back of various mammals; he then killed the animals and found hyperæmia of the skin and of the superficial muscles, accompanied by the reverse condition of the corresponding deep parts. This, says the author, must necessarily be. It is clear that, if the blood flows into a certain portion of the skin, anæmia must at the same time be produced in the subjacent parts that are in nervous or vascular communication with it. It is even demonstrated physiologically that the anæmia will be more decided accordingly as these parts were previously more congested. Thus, especially in pleurisy, is explained the efficacy of blistering, the effects of which, hyperæmia and exudation, are so closely allied to the pathological process on the pleura. Of late years a notable increase in the mortality from pleurisy has been observed, and that in spite of the current practice of thoracocentesis. Undoubtedly, the author thinks, blisters have not been used enough. The possibility of consecutive albuminuria has been urged as an objection to their employment. But, he asks, is the transitory albuminuria more to be dreaded than that which is occasioned by eating too many eggs? Moreover, have we not the alkaline treatment to prevent it? Of course, the author adds, blisters must not be used in cases of diabetes or diphtheria. In conclusion, the author calls attention to Professor Potain's advice to apply a blister over the course of the pneumogastric nerve for vomiting produced by compression of this nerve in cases of tuberculosis.

Unusual Symptoms of Poisoning with Carbon Dioxide.—The *Revue générale de médecine, de chirurgie et d'obstétrique* for December 13, 1803, publishes an abstract of an article by Dr. R. Kayser, which appeared in the *Wiener medicinische Wochenschrift*, 1893, No. 41, in which there is related the case of a woman, thirty-six years old, who tried to commit suicide by inhaling the vapor of burning charcoal. When she came out of the coma produced by this attempt at poisoning she complained of violent tinnitus aurium and of complete deafness. Moreover, she showed psychical excitation, was maniacal, and was the victim of hallucinations of hearing. These abnormities disappeared, save the deafness and the tinnitus aurium, which still persisted at the time of her leaving the hospital, four weeks after her entrance. Nothing abnormal was ascertained on physical examination of the ears. The hearing power for the lower notes of the gamut was preserved. Faradization of the head was followed by very distinct amelioration. The author was inclined to think that the disorders noted in this case, in so far as concerned the hearing, were connected with hæmorrhagic lesions of the ear.

At a recent meeting of the Paris *Société de biologie*, the proceedings of which are reported in the *Union médicale* for December 16, 1893, M. Hallopeau said that he had witnessed in a patient poisoned with carbon dioxide convulsive tremor of the limbs, manifesting itself exclusively at the close of each respiratory movement and being reproduced with absolute rhythm. The inference was that the failure of adequate hæmatosis had been sufficient to produce excitation of the motor convolutions.

Phulluah as a Remedy for Hemiplegia.—In the *Indian Medical Record* for November 16, 1893, Mr. E. C. Beddell, W. M. O., relates the case of a Hindu, forty-two years old, who in his youth had been a sepoy in a rajah's service and had received a sword wound and two bullet wounds. The scars of these wounds were still to be seen, but their situation could in no way account for his paralysis. He had always enjoyed good health and had never had a head injury, a sunstroke, or a fit of any kind. His story of his paralysis was as follows: One night he had gone to sleep perfectly well, and the next morning been found insensible. On recovering consciousness, he had found himself in a hemiplegic condition. For fifty-four days thereafter he had been unable to walk and had had great difficulty in swallowing. He had gradually recovered to some extent. He had for a long time been under "hakimi" treatment [whatever that might be], but had not been benefited by it. On inspection, the author found the man's right side paralyzed. His tongue, which was moist and clean, was protruded toward the paralyzed side. His sensibility was partially affected; he could not tell accurately the situation of a part touched. There was a slight trace of sensation in the occipito-frontalis, the right masseter, the biceps, and the triceps, but it was quite lost in the right trapezius, the rectus, the vastus internus, and the hamstring muscles. The patient could lift his hand to an angle of about forty-five degrees. The usual routine treatment could not be carried out for want of proper medicines and appliances, and the author was therefore obliged to adopt such measures as were within the patient's means. His bowels were cleared out with calomel, and it was ordered that a liniment of eight ounces of phulluah, two ounces of oil of turpentine, and four ounces of rum should be rubbed into the affected parts three times a day. Continued friction with this liniment, together with steady massage, caused a remarkable improvement, and the patient was able to lift a weight of three pounds and three quarters with the paralyzed hand after a month of such treatment. The author is inclined to attribute the favorable result to the use of phulluah and massage. Phulluah, he says, is an oily substance obtained from a plant that grows wild on the hills about Nani Tal. In its fresh state it resembles small white balls of about the size of areca nuts. It melts on exposure to heat. When kept for some time in its liquid form, it becomes of a dirty-brown color. It is largely used among the tribes of the hills for the cure of frostbites and chilblains. The author has found the topical use of phulluah very beneficial in rheumatism, sprains, sciatica, and chilblains, and he is inclined to think that it would do good service in cases of gout, but as yet he has not had the opportunity of giving it a trial. He adds that it has never failed to produce the desired effect where other local applications have been practically valueless. Its action seems to him to be stimulant, emollient, powerfully anodyne, and antiseptic. It is best to heat the crude drug and then use it like an ordinary liniment by friction.

The Rush Medical College, Chicago.—The registrar has issued the following circular, dated January 10, 1894: "In pursuance of the policy recently announced in the resolution to be presented to the American Medical College Association, the trustees and faculty of Rush Medical College have decided to require four years' attendance at college from students who begin the study of medicine this year with a view to graduation in 1898; however, those who have already studied medicine one year or more with a preceptor, so that the four years of study already required will be completed before July, 1897, may graduate after three courses of lectures, as heretofore. To encourage proper preliminary study, graduates in arts and sciences from high-grade colleges and graduates in pharmacy and dentistry from colleges requiring a proper amount of study and two full courses of lectures will, until further notice, be allowed to graduate after an attendance on only three courses of lectures."

Dr. Sachs's Article on Syphilis and Tabes Dorsualis.—The author asks us to state that in Figs. 1 and 2 of the plate accompanying his article, published in the *Journal* for January 6th, the lateral and antero-lateral regions are of a lighter color than in the original drawing. This, he says, does not represent a diffuse sclerosis, for that was limited to the posterior columns.

Original Communications.

OBSCURE INJURIES OF THE SPINE FOLLOWED BY PARALYSIS OF LONG STANDING, RELIEVED BY SUSPENSION AND PLASTER-OF-PARIS JACKET.*

By LEWIS A. SAYRE, M.D.

HAVING seen a number of cases of serious injury of the spine followed by paralysis, more or less complete, involving the bladder and rectum, which were relieved by suspension and a plaster-of-Paris jacket, and eventually entirely recovered, and two of these patients having recently called upon me in perfect health after the lapse of many years, it occurred to me that it would be desirable to look over my note-books, and publish the records of the cases for the benefit of the profession.

CASE I.—C. W. H., about thirty-six years of age. On October 15, 1877, in switching from a main track to a branch, the train going around a curve at a rapid rate, while he was standing in the rear of the car, he was violently thrown upon the corner of a stove and instantly paralyzed below the waist, probably by a fracture of one of the lumbar vertebræ, presumably the third. While paralysis of motion was complete at the time, there was some sensation and pain in the outside of the left thigh for a few hours. There was loss of control of the bladder and rectum, with a feeling of constriction, as of a tight band, about the lower part of the abdomen, the line of demarcation between the active and paralyzed parts being clearly defined. Pain at the point of injury was incessant and severe beyond description. The bowels were evacuated by cathartics and clysters, and the bladder by the catheter. After ten weeks there was some return of sensation with ability to evacuate the bladder voluntarily as a general thing, and in a little more than five months from the time of the injury there commenced a slight muscular action in the legs, which increased irregularly, so that in a year after the hurt the limbs could be drawn up and pushed down in the bed, and even be made to move as in walking, with the body supported on crutches and by an attendant, but only a trifling amount of weight could be sustained by them.

During all this time there were frequent periods of almost total paralysis of both motion and sensation, greatly influenced evidently by the formation of numerous abscesses, which began about six months after the injury, discharging through the rectum, the outside of the right thigh, and the inside of the left, the latter giving exit to two fragments of bone half an inch to an inch or more in length and from one to two lines in thickness; one piece from two or three lines in width at the base, tapering to a point, and partly necrosed; the other, from one to two lines wide, somewhat pointed, and slightly curved or twisted in shape, but perfectly bright and clean, and showing its fracture very plainly. The patient, who was a physician, stated that he was confident that another fragment of bone had previously escaped *per rectum*, while still another was distinctly felt in the abscess that formed in the outside of the right thigh, but afterward disappeared. During the winter of 1878–'79 abscesses formed with great frequency, causing much loss of strength through the large quantities of pus formed and the severe pain they created. The partial recovery of the action of the muscles was in a great measure lost, so that they responded to the test of electricity no more than would those of a man recently deceased, and he was unable to distinguish the difference between heat and cold when applied to the surface of the extremities; indeed, so imperfect was sensation that both legs were badly burned on different occasions by too hot soapstones, it being necessary to use artificial heat to maintain the proper warmth in the extremities.

The abscesses finally stopped forming under the use of iodide of potassium, so that after May, 1879, only two appeared, the last about the 1st of August. With the cessation of the abscesses improvement took place in the general health and in the action of the legs, apparently aided by the daily use of electricity and frictions and the persistent exercise of the muscles by volition, so that by the autumn of 1879 he was able, at times, to get a part of his weight on his feet by supporting himself on crutches or over the back of the chair. But he was still unable to be off the bed except for a short time during the day, and often he did not even make the pretense of sitting up for more than a week at a time. He was compelled to evacuate the bowels by injections, except at times when suffering from painful diarrhœa. He also suffered such intense pain in his spine and limbs all the time that he was forced to take from one to three grains of morphine daily to keep even bearably comfortable.

On November 30, 1879, the actual cautery having previously been applied with but trifling benefit, if any, with the assistance of my son, Dr. L. H. Sayre, I suspended the patient, and encased him in a plaster-of-Paris jacket. The relief from pain, and the improvement in the sensation and motion of the limbs thus produced, indicated the probable benefit which would follow from this mode of treatment.

The jacket was applied exactly as described in my work on *Spinal Disease and Spinal Curvature, etc.*, the closest attention being given to the minutest details. The result was a remarkably accurately fitting case which gave perfect and even support to the whole trunk, and complete and absolute rest to the injured and diseased parts. Three days later the patient could walk about the room without mechanical support, and two days after this he went on the street for his first walk in more than two years. Sensation, which had been very imperfect, became nearly normal; control of the muscles became constant and much more perfect; the frequent attacks of spasmodic contractions of groups of muscles entirely ceased, as did also the occurrences of almost total paralysis of the legs, during which he would often be unable to draw them up in bed for days at a time. Complete control of the bladder was obtained, and the bowels became much more natural in their action, enabling him to wholly discard injections. He was also enabled to discontinue the use of heat to the limbs, as they had become as warm as the other parts of his body. Though still suffering severe pain at the point of injury, he succeeded, within a period of six weeks, in reducing the quantity of morphine to less than one half of that taken before the jacket was applied. At this time the muscles were still too weak to sustain the weight of the body with the legs flexed, or to raise it on the ball of the foot and propel it forward as in natural locomotion. This gave him a necessarily slow and somewhat awkward movement, but there was apparently no paralysis of any muscle at this time, and he was able to walk a fourth of a mile without artificial aid of any kind, except the *moral* support of a light bamboo cane.

On removing the jacket, January 13, 1880, he found himself unable to walk across the room without support of some kind, while there was a marked increase of pain. There was also a perceptible change in the form of the trunk, it being two inches smaller around the waist, probably by absorption from lateral pressure of the jacket above the ilia, where it had been crowded in to get a point of support to maintain extension. Upon the application of a new plaster case there was immediate relief of the increased pain and a return of the use of the legs as before, with considerable improvement in their action, the new jacket being, if possible, a better fit than the first. This showed most clearly the need of and the great benefit derived from the extension and support of the plaster jacket.

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* Read by title before the Section in General Surgery of the First Pan-American Medical Congress.

On February 1st he reported that he could then raise himself on his toes by voluntary contraction of the extensor muscles of the feet.

On March 11, 1880, he called at my office feeling perfectly comfortable. He could walk without cane or other support nearly as well as before the accident. He wore the jacket eighteen months, when he was perfectly consolidated. Since then he engaged in the active practice of his profession until July, 1887, when he died.

Case II.—W. F. C., twenty-nine years of age, was brought to me by the preceding patient, both of them having been injured by an accident on the same railroad. On August 10, 1877, while acting as mail agent, he was in a train which ran off the track and for some distance on the ties, during which time Mr. C. was thrown violently about the car in various directions. This caused partial loss of consciousness for a short time. He was soon, however, in the possession of his faculties, and continued at his duties as mail agent until August 13th. During these three days he suffered severe pain in the lumbar region, where there was noticed a slight swelling and contusion. Four days after the accident he gave up work and took to his bed, on account of severe pain in his loins. His bowels had been constipated for three days following the accident, and he had also experienced considerable pain in his head during this time. On the third day the patient for the first time was unable to voluntarily empty his bladder, except while supporting himself by his hands on the arms of a chair, or by supporting himself on crutches. This continued up to the time he was first seen by me—January 17, 1880. He was confined to bed for twenty-two months, continuously so for thirteen months, with occasional intermissions of a few moments at a time. Three weeks after receiving the injury he noticed loss of sensibility in both feet, which gradually increased, and extended upward until it reached the knees, which was at the end of ten months. The anæsthesia now gradually subsided from the right leg, while it extended upward in the left, involving the whole thigh. During these ten months he was actively treated—local bleeding by means of leeches, blistering, iodide and bromide of potassium in full doses being used. The loss of sensation in the left limb remained unchanged until July, 1879, when he felt sharp pain from the back pass down the inside of the thigh and leg, and while before July, 1879, pricking with needles or the application of a strong current of electricity failed to cause any sensation whatever, he now began to feel a tingling from such operations. Voluntary motion in the left limb became impaired from the first, and at the end of seven months was completely abolished. Voluntary motion in the right leg was never impaired. There had been a total loss of sexual power from the first, though sensation of the genitals had been normal. The pain in the lumbar region was continuous and severe for thirteen months from the time of the injury, but it then began to diminish and had gradually grown less severe. During these thirteen months the patient was actively treated as before described, and a brace was employed; but, owing to the continuous and severe pressure which it caused on the crests of the ilia and under the arms, it had to be discontinued. During this time he had been seen by a large number of distinguished physicians in different parts of the country, all of whom considered his case incurable, but thought he might receive some relief.

At the time when he first came under my observation, January 17, 1880, the patient weighed about two hundred pounds, very nearly what he weighed before his injury. His appetite and digestion were good and the bowels were regular. He slept tolerably well. The right limb was normal, the left incapable of any voluntary motion. There was some sensation in the limb, so that when a needle was plunged into the patient, he experienced a sensation as though his leg had "gone to sleep." The limb was well nourished, having diminished but little in size. There was constant pain in the back, though not very severe. Pressure over the first and second lumbar vertebræ caused an increase in the pain; crowding the vertebræ together by pressing on the head or shoulders increased the pain in the lumbar region, while when the superimposed weight was taken off by suspending the body by the shoulders, the patient felt perfectly easy. He was unable to sit erect longer than fifteen or twenty minutes without its causing violent pain and great exhaustion. When he supported himself on his crutches he felt very comfortable and could remain so for an hour or more. The urine could not be voided except when the patient suspended his body from his shoulders by means of his arms or hung upon his crutches.

January 18th.—He was to-day cupped over the lumbar region and about four ounces of blood obtained, deep punctures by means of a sharp tenotome being employed instead of scarification.

January 23d.—Sensibility of the left limb has increased since the cupping, and the pain on pressure in the lumbar region has diminished. The actual cautery was applied on each side of the lumbar spine, over the transverse processes, for about three inches.

February 3d.—Suspended the patient and applied a plaster-of-Paris jacket. When it had set he could stand without other support, which he had not been able to do since the accident. Sensation has returned to the left leg since the application of the cautery, and he can now slightly move the toes voluntarily.

March 16th.—A letter was received in which the patient said: "Sensibility and motion are returning rapidly; the former is now nearly perfect. All the muscles now respond to the battery."

May 26th.—Patient returned. Sensation and motion greatly improved. He can now walk with the assistance of a cane. The jacket was removed and made into a corset. There was no tenderness on concussion or pressure along the spine. He could stand erect without any support.

September 20th.—He has been in perfect condition since the last note; he can now stand without pain or support.

March 23, 1881.—Mr. C. returned to-day in apparently perfect health, but he states that he can not yet do without the corset for any length of time. In December, 1880, he first attempted to do without it, and he became much exhausted after a few moments. He has, however, gradually increased in strength, so that he can now leave it off for a whole day, provided he does not walk or exert himself. The genital organs still remain powerless—no sexual desire or erection. He can pass his water easily when the jacket is off.

November 9th.—He returned in perfect health except as regards his sexual organs. He has not worn the jacket since last July.

June 26, 1886.—Patient looks perfectly well; weighs two hundred and five pounds; says he can not lift any weight without feeling it in the back. The numbness in the feet has entirely disappeared; sexual power has returned, but there is no desire.

August 2, 1893.—The patient called to see me as he was passing through town with his wife and three-year-old boy. He was in perfect health, sexually as well as otherwise. He frequently rides sixty miles a day on horseback without suffering any pain or fatigue.

Case III.—Mr. O. E. B., aged fifty-three years, in June, 1879, was standing up in the rear car of a train when it jumped the track and ran on the ties for some distance and then turned over. When he was removed from the wreck he had severe pain in the lower part of his back and no sensation in his lower extremities. The lower extremities were entirely motionless and cold. The right external malleolus was torn off and he received various other bruises about the body. The bladder failed in its functions after the accident, and the urine had to be withdrawn by catheter. The bowels became costive and required to be moved by cathartics. Digestion remained good and appetite fair. It was supposed by his medical attendants at that time that there had been a dislocation of the eighth or ninth dorsal vertebra which was pressing on the cord.

He suffered great pain and loss of sleep. On the fourth day sensation began to reappear in the lower extremities, and this soon developed into a hyperæsthesia. This hyperæsthesia also affected the upper part of the body. He did not suffer from severe pain in the spine at this time. After the tenth day the bladder resumed its function. On the third or fourth day, after many trials, he succeeded in moving the second toe of his left foot slightly, and from this time motion gradually, but very slowly, developed in other parts of his lower extremities, and in the course of a few weeks he could extend the leg a little upon the thigh. A slight slough occurred on the left heel. The lower extremities remained very cold, and had to be kept warm by hot bottles and the use of friction, etc.

In September he first rode out in a carriage, but while riding could not be comfortable except when supporting himself on his arms, and each time when he came home he felt so very tired and exhausted that he was finally obliged to give up this exercise.

On October 30th a felt corset was applied to him. This made him feel much better, and gave support to his back. With this on he again rode out and with more comfort. The right foot and leg remained somewhat painful. The right thigh was atrophied, measuring an inch and a half less than its fellow.

In the latter part of December he began to bear some weight upon his legs, and could, when first seen by me in March, 1880, bear his whole weight on his limbs after he had been helped to the upright position. While sitting up he had a frequent desire to raise himself upon his arms. He could flex the thighs moderately, and the legs upon the thighs. The left leg had more power than the right.

The tenth and eleventh dorsal vertebræ were more prominent than the others. The spinous and transverse processes were more prominent and much thickened, and on firm pressure considerable pain was produced. Below this point there was more than the ordinary lumbar lordosis. Sensation was still a trifle exaggerated below the tenth and eleventh dorsal vertebræ, except in the left foot, where there was partial anæsthesia. On touching the sole of the right foot an immediate reflex muscular movement followed, while in the left reflex movement was considerably delayed, and the foot then moved very slowly. When sitting up for any length of time he supported himself by leaning on his arms, which, he said, "rested him." He had to be assisted to his feet, after which he could stand by supporting himself somewhat on his crutches. By being raised so as to take most of his weight from his feet, he felt better than when standing. After being supported in this way for some moments he felt, when let down again, tender and uncomfortable along the lower part of his back.

About five or six ounces of blood were drawn from the lower dorsal region by means of deep incisions and cupping glasses.* The next day the patient voluntarily remarked that his thighs felt different, and that he could move these muscles voluntarily, which he had not been able to do since the accident. The actual cautery was applied on the right side, opposite the tenth dorsal vertebra, and on the left side, opposite the fourth lumbar vertebra. When the burns of the cautery had healed, a plaster-of-Paris jacket was applied, from which he experienced some relief from the constant aching in his back, but not complete freedom from pain. He was able to move his extremities more freely, but the jacket did not give him the expected and desired relief to his pain and improvement in muscular strength, and it was evident that too much "dinner pad" had been used, and sufficient "waist" had not been made to the jacket. This jacket had been applied while he was sitting on a stool and partially suspended from his head and axillæ. A second jacket was applied while the patient was suspended from his head and arms while standing upright, the extension being carried to the point of making the patient comfortable. Great care was used in "waisting in" the jacket, and in this better-fitting jacket he had but little pain in his back and was able to walk very much better. He said it gave him great support.

Six months later he wrote that he was improving surely but, as he thought, very slowly. The right leg continued to be an inch and a half smaller than the left, and had much less power, although it could bear the whole weight of his body. The left leg was strong but sluggish. The circulation continued to be slow in both lower extremities. He used his crutches in going outdoors, but in the house he could get about with two canes, and could take a few steps without support. He also thought he had improved more in the last four weeks than in the preceding few months.

In December, 1881, he called on his way to Europe; walked upstairs without assistance except his cane, and his hand on the baluster. He could walk on the level ground without jacket or support, and could concuss himself on his heels without pain, but preferred to wear the plaster jacket for protection. He could cross each leg over the other, but did this better with the left than with the right; he had voluntary control over the muscles of his lower extremities. The left leg is more tardy in its movements, although it is the largest. A plaster-of-Paris jacket was applied and made into a corset, and with this he sailed for Europe.

In 1887 he reported that he had steadily improved, although his legs were still slow in responding to his will. He was still using massage and Swedish movements.

In February, 1892, he called, and stated that he had been able for some years to walk up and down stairs without assistance, and was in perfect health and attending to active business, but was unable while lying down to rise from the floor without assistance.

The patient was seen in June, 1893, and his back continued well.

Case IV.—L. V. T., about twenty-eight years of age. While he was in charge of an express car, in May, 1886, the train was derailed and fell down an embankment ninety or a hundred feet into Lake Champlain, the car turning over several times, and the iron safe striking the patient violently a number of times. He was rendered partly unconscious by the fall, and when he came to himself was unable to move his lower extremities. He has had very defective control of his bladder and bowels since the time of the injury.

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* In all of these cases the blood was withdrawn from punctures made very deeply along the spine, and not from superficial scarification—a point which, I think, is of much importance in cases of congestion of the spinal cord.

When first seen by me, some months after the injury, he was still paralyzed as to motion and sensation in the lower extremities, bladder, and rectum, but not completely so, as he was able to drag himself about on crutches but was unable to rise without assistance. He had severe pain in the lumbar region, and the sensation as of a girdle around the waist. While partly suspended by the head and shoulders, he could move his legs with greater ease and the girdle sensation disappeared, and with a plaster jacket could sit upright for several hours without discomfort. When unsupported by the jacket he had constant pain in his back, and was unable to sit erect for more than a few moments. Plaster jackets, applied while the patient was partly suspended by the head and shoulders, were renewed at intervals of about six months for a period of two years. The patient recovered control of his bladder and rectum in about eight months, was able to walk with the aid of a cane in about eighteen months, and at the end of two years and a half was perfectly well. On applying to the express company for information as to his present condition, I received a reply on August 21, 1893, saying: "Mr. T., referred to in inclosed correspondence, is to all appearances in perfect health."

There are certain points of similarity in all these cases upon which I wish to dwell with especial emphasis. They all of them remained more or less completely paralyzed for long periods after the receipt of the injury—in one case over two years—and marked improvement did not begin until *traction* was made on the spinal column. In every case when the spine was stretched the patients said they felt better; they had more control of their limbs, and sensation was keener. In one case the patient was unable to evacuate the bowels or bladder except when the superincumbent weight of the body was lifted off. All these cases continued to feel this improvement so long as they were *properly* sustained by *properly* fitting plaster jackets. When the support became broken down and failed to retain the spine in its stretched position, the symptoms began to return, to disappear again on the reapplication of the stretching and retention of the spine in this position by an accurately adjusted support.

A CASE OF
CONTUSION AND RUPTURE OF THE ILEUM

WITH PERITONITIS, WITHOUT EXTERNAL WOUND, SUCCESSFULLY TREATED BY CŒLIOTOMY AND PRIMARY ENTERECTOMY, FOLLOWED BY CIRCULAR ENTERORRHAPHY (MAUNSELL'S METHOD).

*EXHIBITION OF PATIENT AND SPECIMEN.**

By FREDERICK HOLME WIGGIN, M. D.,
PRESIDENT OF THE SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL;
VISITING SURGEON TO THE CITY HOSPITAL (LATE CHARITY), ETC.

The case which I desire to call your attention to this evening presents several features of interest, and some important points for reflection and discussion. The surgeon is beginning to invade, and successfully, the field which to within a short time the physician has considered entirely his own—namely, peritonitis without external evidence of injury. Cases of this nature that have been treated by cœliotomy and intestinal suture, in which recovery has followed, have been few. A careful search of the literature discloses only one recorded case of successful primary resection * in this class of injuries, exclusive of the one I am about to bring to your notice.

That injuries of this nature are not of great rarity is admitted as soon as the variety of accidents that lead to this condition is considered—*e. g.*, kicks, blows, falls, etc.; nor are they confined to any locality or any special walk of life. That this is true is proved by the fact that in the course of my private practice I have had two cases within twenty-eight months—one in May, 1891, and the other in September of this year. It is a group of cases that will be more carefully considered hereafter, and must be of great interest to the general practitioner, as from the absence of external wound he will be first called to such a case. On him, therefore, in the future, will the responsibility largely rest for the failure of surgical aid to end in recovery of the patient. This my cases exemplify, and the mere statement of the facts in each answers the question, Why did one patient die while the other recovered?

Case I.—Late on the evening of May 28, 1891, I was called in consultation to see H. W., fourteen years of age, whose physician gave me the following history: On the afternoon of the 23d, while feeding a calf, the boy received a kick in the right lumbar region. The pain, which was at first severe, soon passed away, and he went on with his regular vocation, not even mentioning to his family the accident that had befallen him. The following day (the 24th) being Sunday, he attended church after doing his chores as usual, and went again in the evening. While at this service, he was suddenly seized with violent colicky pains, nausea, and vomiting. On the 25th the family physician was sent for. His attention was not at first called to the accident, and the patient complaining of constipation with the other symptoms, he was given large doses of magnesium sulphate, enemata, and morphine in constantly increasing doses. Bran poultices were applied externally.

As the patient steadily grew worse under this treatment, five days after the accident I was sent for. On examination, no external marks of violence were found. The abdomen was tympanitic; muscular rigidity was marked and increased by pressure, and especially at a point two inches to the right of the umbilicus. There was slight dullness on percussion at this point. The general abdominal pain had disappeared, vomiting had ceased, and constipation was absolute. His countenance was drawn and anxious; the temperature was 99·5°, pulse 130, and respirations 30.

The diagnosis was intestinal rupture and general suppurative peritonitis. Although the prognosis was very unfavorable, I advised operation as the patient's only chance. Cœliotomy confirmed the diagnosis. A large amount of pus was found in the cavity, shut off at various points by adhesions, and a rupture of the ileum, which was closed by Lembert sutures. The general cavity was washed out with a weak solution of hydrogen dioxide, the external wound partially closed, and drainage with iodoform gauze employed.

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* Read before the Society of the Alumni of Bellevue Hospital, November 1, 1893. For a report of the discussion, see vol. lviii, page 700.

* Croft, Clinical Society, London, March 14, 1890.

The anæsthesia was badly borne; the patient stopped breathing and was revived with much difficulty during the operation. The operation was prolonged by the great intestinal distention, necessitating several incisions to allow gas and fæcal matter to escape before they could be returned. The patient died six hours after the completion of the operation, which occupied two hours.

The chief points of interest in this case are: (1) The absence of shock; (2) the cessation of pain for twenty-four hours after the accident, although the intestine was so badly contused that it then became perforated; (3) the energetic medical treatment employed for three days and the consequent delay before surgical interference was considered; and (4) the length of time required for the operation.

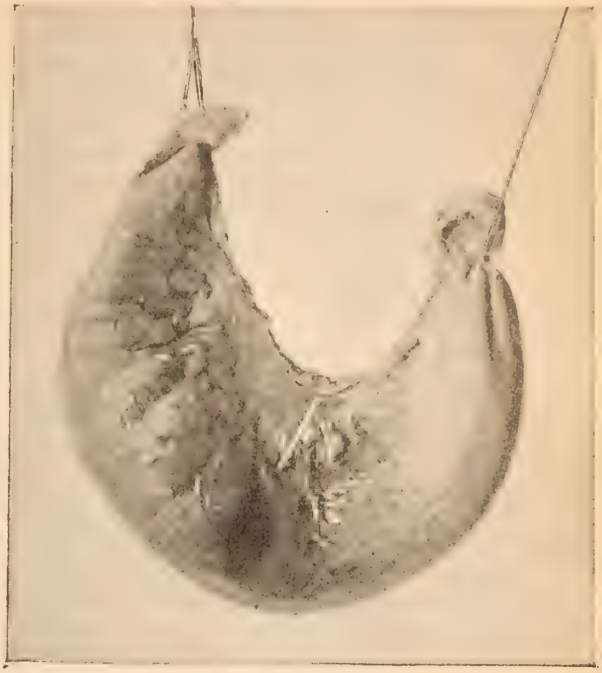
Case II.—On the evening of September 11, 1893, I was called to see A. M., fifteen years of age, a colored boy. He gave the following history: On the afternoon of the same day, while in a pasture, he had received a kick from a horse on the right lumbar region and right elbow. He was found lying on his stomach, groaning. In about ten minutes he began vomiting, and complained of continuous nausea. At first he vomited only food, but later, both before being moved and after, he vomited each time about four ounces of dark, clotted blood.

On examination at 8.30 p. m., the patient was found to be suffering slightly from shock. He lay on his back with his knees drawn up, and he complained of great pain, especially at a point to the right of the umbilicus. There were no marks of external violence on the abdomen. He had an anxious expression. Morphine, an eighth of a grain, was administered hypodermically, and a drachm of fluid extract of ergot was given by mouth. An ice bag was applied locally. At this time his temperature was normal and his pulse 80.

September 12th.—The pain continued all night, at 2 a. m. his pulse was 104 and temperature 100·5°, and soon after 3 a. m. another hæmorrhage through the stomach occurred, about eight ounces of dark, clotted blood being ejected. This was repeated at 9 a. m., his pulse at this time being 106 and his temperature 101°. Owing to a misunderstanding, I did not see the patient again until 7 p. m., when his condition was as follows: Pulse, 114; respirations, 30; temperature, 102·5°; he was lying on his back with his knees drawn up, and with an anxious countenance. The abdomen was tympanitic; there was marked muscular rigidity, increased by pressure at the point of greatest tenderness—*i. e.*, to the right of the umbilicus.

The diagnosis was traumatic peritonitis with contusion and perforation of the intestine, and an immediate operation was advised. To this the patient consented, and at midnight, with the able assistance of Dr. W. S. McLaren, of Litchfield, Conn., to whom I wish to acknowledge my indebtedness, the operation was performed. Just previous to the administration of the ether his temperature was 102·7°, pulse 116, and respirations 33.

An incision about four inches long, in the median line between the umbilicus and pubes, was made and the peritonæum opened. The transverse and descending colon were filled with hard fæcal matter, owing to the fact that the patient had a large condyloma which made defecation painful. Beginning at the cæcum, the small intestine was drawn out of the cavity and carefully examined inch by inch. It was more or less distended, and there was a fibrinous exudation and also slight adhesions, especially about the injured knuckle. A knuckle of intestine was soon discovered, which was ecchymosed, but only near its mesenteric border. It was decided, after careful consideration, that this portion would recover its circulation and tone, and it was passed by. On going higher up, near the jejunum, another knuckle of ileum was found, which was so bruised and dark in color that, although no perforation could be discovered prior to removal, it was thought best to excise about six inches. (After removal, a small perforation was found at about the center of the specimen, near its mesenteric border. This was done, safety-pins being used for clamps. The vessels in the cut mesentery were ligated separately, and the edges of the mesentery united by a continuous suture of catgut. The healthy ends of the ileum were brought together, invaginated, and united by Maunsell's method, except that the sutured ends of the bowel and the longitudinal slit in the gut were not painted with Woelfler's solution, nor were the raw parts blown over with iodoform, as advised by him.*



While the ileum was being excised the patient came out from the influence of the ether, strained and tried to vomit, and a quantity of blood and fæcal matter escaped into the peritoneal cavity. This accident was due to the large size of the safety-pins. A liberal quantity of a fifteen-volume solution of hydrogen dioxide was poured into the cavity, and allowed to remain while the ends were completely joined, when more hydrogen dioxide was poured over them. Some time was allowed to elapse before the resulting foam was washed off and the cavity flushed with normal sterilized salt solution (0·6 per cent.). Then the intestines were returned to the cavity, which was freely irrigated and left full of hot sterilized salt solution. The wound was closed, no drainage being employed. The operation from the time of beginning the anæsthesia occupied an hour and a half, and was concluded at 1.30 a. m.

13th.—At 4 a. m. the patient's pulse had risen to 130, and the temperature had fallen to 99·5°. During the night there was very little nausea. At 10 a. m. his pulse was 114, temperature 102·4°; and at 9 p. m. the pulse was 136 and temperature 102·2°. Morphine was given in one-eighth-grain doses every three hours, beginning at 4 p. m. At 11 p. m. he was comfortable and retained peptonized milk.

14th.—At 2 a. m. his pulse was 118 and temperature 100°. At this time gas escaped from the rectum (twenty-four hours and a half after the operation). The patient slept well, retained peptonized milk and beef peptonoids during the day, and complained of no pain. Gas was freely passed from the rectum, and he had a desire to have a movement. At 8 p.m. his pulse was 104 and his temperature 101°.

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* *Am. Jour. of the Med. Sciences*, March, 1892.

There is little of further interest to report. The patient's bowels moved without aid on September 15th at 2 p.m. (sixty-one hours and a half after the operation). During the ensuing twenty-four hours (September 16th) the patient had five large movements, and the morphine was stopped. On September 17th the patient had five movements. He had complained of no pain. His pulse was 98 and his temperature 99·5°. After this the temperature and pulse became normal and remained so. The bowels moved every day or every other day without aid, and on September 21st he was allowed ordinary diet. He has remained in good health, and now awaits your inspection.

The points of interest in this case, aside from its successful termination, are: (1) The hæmorrhages, which in recorded cases, successful and unsuccessful, that I have found, occurred only once—in Croft's case, and this was very slight; (2) the slight amount of shock when the patient was first seen, four hours after the accident, the temperature and pulse being normal; (3) the excision of the contused and perforated portion of the ileum, and the end-to-end union by Maunsell's method, which is comparatively new, and has not been employed many times; (4) the use of hydrogen dioxide in full medicinal strength for the purpose of disinfecting the general peritoneal cavity, this being the second successful case in which it has been used, the other being one of my own a few days previously; (5) the closing of the abdominal wound, leaving the peritoneal cavity full of hot, sterilized salt solution, the object of this being to lessen shock, to prevent adhesions, to aid in the readjustment of the intestines and omentum to their proper positions, to lessen the danger of septic peritonitis,* and to aid by osmosis the action of the bowels; (6) the shorter duration of the operation; and (7) in the after-treatment the early administration of peptonized food.

In the first case the operation was performed after five days' delay, having thereby been rendered more difficult, and requiring prolonged anæsthesia, which the large doses of morphine rendered more dangerous. The patient was exhausted from pain, constant nausea, and want of proper nourishment, and was septic. In the second, the early recognition of the condition, the comparative promptness with which the operation followed, its shorter duration, the use of hydrogen dioxide in full strength, the filling and closing of the peritoneal cavity with hot sterilized salt solution, made the difference between failure and success.

A careful study of all the recorded cases, successful and unsuccessful, and my own, shows the causes of failure of surgical measures to be (1) delay, which has been responsible for by far the greatest number of deaths; (2) hæmorrhage; (3) failure of the suture and septic peritonitis.

Delay must be obviated by a fuller knowledge of the meaning of the symptoms by the general practitioner. The important factors in the diagnosis are: The history of injury, persistent nausea, hæmorrhage, prolonged shock, rise of temperature, increasing rapidity and weakness of the pulse, increased frequency of respiration, rigidity of the abdominal muscles, persistent pain, with or without pressure, and the facial expression. Hæmorrhage can be avoided after operation by greater care in tying the blood-vessels in the mesentery, singly and not *en masse;* failure of the suture by better technique and the employment of Maunsell's method for end-to-end union; septic peritonitis by the liberal use of hydrogen dioxide where infection is known to exist, and leaving the abdominal cavity full of sterilized salt solution.

Finally, it may not be out of place to utter a word of caution as to the administration of the anæsthetic. It is generally intrusted to the least experienced, and therefore the least competent, assistant, and little attention is paid to the quantity employed. Operations of the character we have been considering must often of necessity be prolonged. It has been my custom when possible, since my experience in the first case, to have the anæsthesis in the hands of a thoroughly experienced and competent assistant. This lessens the mental wear and tear of the operator, and allows of more rapid work. By the use of Dawbarn's modification of the Clover inhaler, patients have been anæsthetized and kept unconscious for an hour with but four ounces of ether. They regain consciousness rapidly, have little or no nausea, and the danger of nephritis, which is getting to be a very frequent cause of death after operation, is materially lessened. With closer attention to details, quicker recognition by the general practitioner of the wisdom, at least, of early surgical advice, and, when doubt arises, giving the patient the benefit of it by an exploratory cœliotomy, success will, in these cases, cease to be the exception.

55 West Thirty-sixth Street.

THE EFFECTS ON THE VOCAL CORDS OF IMPROPER METHOD IN SINGING.*

By H. HOLBROOK CURTIS, M.D.

It would be strange indeed if a laryngologist who was daily in the habit of examining very many throats of singers did not have his attention particularly attracted to the difference in the appearance of the glottis as the direct result of different methods of voice production. Several years ago—as early as 1884—I observed that many pupils of a certain professor of singing presented marked peculiarities in regard to the position of the free borders of the vocal bands. The slightly elliptical shape of the chink of the glottis which this class of pupils presented in emitting the usual sounds to allow the proper view of the larynx led me to inquire as to the particular method of teaching which would produce in so many throats a typical appearance. I soon found out that these pupils were in the habit of taking daily exercises almost entirely on a single vowel, and that single vowel being the letter "O." The vocal cords appeared striated, with frequently a congested area at their anterior attachment. Frequently a nodule, more or less defined, would be observed about the center of the free edges on either cord; this is a picture which every laryngologist will recognize. Another type, of which the study is most interesting, is that of a class of pupils undergoing instruction at a conservatory where that pernicious French method, the so-called stroke of the glottis (*coup de glotte*), is daily practiced. In this type the writer has observed the middle third of the cords to be slightly bulged, the cords presenting a convexity in contradistinction to the concavity exhibited in the last group. These pupils had been singing chiefly on the vowel "A," pronounced as "ah" in English, and with the emission of each note the middle portion of the cords would clash and, by constant attrition, become hardened and callous. The cords in this particular type do not usually show congestion; their appearance is usually of a good pearl color and healthy looking in every way. The complaint which they make upon consultation is a difficulty in singing the so-called *mezzo voce* and a lack of richness of tone and *timbre*, with extreme weakness of two or three notes in the upper-medium register. It was these two opposite appearances of vocal cords, which are every day observed in singers' throats, that led to an investigation of methods employed by the various schools of singing, and has opened up a field which I think has been entirely neglected, though of the greatest importance to every laryngologist who has to do with the singing voice.

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* *British Medical Journal*, 1892, Max Witbard's experiments.

* Read before the First Pan-American Medical Congress, September, 1893.

Two names are intimately linked with the traditions of method in singing—those of the elder Lamperti (that illustrious exponent of the best Italian school), and Mandl, who, by his ingenious arguments, though founded on a false physiological basis, succeeded in completely overturning the art of voice production which previously had been taught throughout Europe. He substituted in place of the so-called Italian school a method of abdominal respiration, which was at once adopted in the Paris conservatory and has obtained to within the last three years an almost universal recognition in the best schools of the Continent.

It is the writer's purpose, without going too deeply into the history of singing, to discuss the various methods of respiration and initial tone production, and to show, by a series of experiments made upon individuals, the effects of certain methods of voice building, hoping to arrive at some definite conclusion as regards the proper exercise and position of the larynx, and consequently proper tension of the vocal cords during tone emission. For the brief historical sketch which I shall give I am indebted almost entirely to the able article of Dr. Joal, of Mont-Dore, which appeared in the *Revue de laryngologie, d'otologie et de rhinologie*, Nos. 8, 9, and 10, Paris, 1892. The position which Dr. Joal occupies at Mont-Dore (the favorite resort of almost all the European artists) has enabled him to consult freely, for a number of years, the most distinguished vocal talent in Europe, and his views upon voice production should be carefully read by every instructor who wishes to profit by the exceptional opportunities which that author has enjoyed. One can not read his able discourse upon the singing voice without feeling that his every utterance is *ex cathedra*. In 1842 Beau and Maissait divided the respiration of singers into three characteristic types—the superior costal, inferior costal, and abdominal. The superior costal may be illustrated as the breathing of a woman tightly laced, the respiratory expansion taking place chiefly in the cone of the thoracic cavity, the upper ribs, collar bone, and sternum rising and falling during the respiratory act. In the inferior costal type the inferior ribs (commencing with the seventh downward) are rotated and elevated, the sternum moving only in its inferior portion, the abdominal wall being contracted during the inspiratory act. In the true abdominal type the thorax is supposed to remain completely fixed, the diaphragm taking the ribs as a fixed point, lowering the abdominal viscera, thus distending the wall of the abdomen in inspiration. It is this latter type of breathing which has been taught for the last thirty years in France.

Mengozzi, together with the masters of one of the conservatories, determined upon the following rules illustrative of the breathing of singers: "The respiratory act in singing differs somewhat from that used in speaking. In speaking, the abdomen is distended in inspiration and recedes in expiration, while in singing the abdomen must be drawn in during inspiration, returning slowly to its natural state as the chest contracts in expiration, thus retaining as a negative force the air which has been introduced into the lungs."

In a revision of this method, published in 1866 by Baptiste, these laws are repeated, with the addition of a note by Dr. Mandl (the apostle of abdominal respiration), who advocates the advancing of the abdomen in inspiration. Mandl carried his point and his ideas became generally adopted by the conservatory. M. Bonheur and Dr. Cheval, of Brussels, advocated the superior costal type of breathing, in contradistinction to the method of Mandl. Mandl, in his work, states that the larynx becomes very much depressed and the glottis enlarged in the costal method of respiration. Joal answers him in these words: "We do not find this depression of the larynx referred to in any of our classical treatises on physiology, anatomy, or in any of the numerous works which have appeared since 1855 on laryngology; consequently, we suppose that writers do not share the ideas of Mandl on the subject. Besides, we have examined a number of persons whom we engaged to breathe alternately from the abdomen and from the shoulders. We ourselves, in singing, have often observed the movements of our larynx, and we have never observed that the clavicular inspiration caused the thyreoid to fall." Nicaise explains this fact by demonstrating, experimentally, that during strong inspiration the trachea contracts and becomes shorter, which draws down the larynx.*

It is very difficult for a professional man to take cases of distinguished singers in his own private practice and hold them up by name as models of perfection of certain types. Joal made the assertion, in an article published in 1890, that great artists, especially women, used the superior costal method. The distinguished critic of *Le Temps* challenged Dr. Joal at once to mention some of these artists. The doctor responded: "I would be happy to gratify Mr. Weber's desire, but it is very difficult for a physician to go into personalities and to say that a certain singer is using a vocal method considered disastrous and execrable by masters of criticism." Melchissedec, however, offered himself as an example of the superior costal respiration, saying that it had enabled him to sing constantly for twenty-five years. Both his strength of tone and tremendous endurance, with an almost perfect glottis, attest that the method has not been injurious to him.

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* *Revue de médecine*, 1889.

The abdominal method of breathing has many powerful advocates; M. Obin and M. Faure, for example, speak most highly of it; Shakespeare, of London, Behnke, and Lennox-Browne are also its advocates. The instructors of both methods are very apt to quote great artists as the exponents of their particular school. Joal cites the case of Rubini, the celebrated tenor, whom Massini and his pupils declare originated abdominal respiration. Bonheur, on the contrary, states that he expanded his upper chest, Walshe even going so far as to say that he fractured his collar bone in making a violent effort to reach "B flat" in *The Talisman* of Pacini. Lablache and Laget acknowledged that, in spite of long and attentive observation, they had not been able to distinguish in the theater how this illustrious tenor breathed. Joal goes on to state that the famous Lamperti is alternately represented as a partisan or opponent of the abdominal type of breathing, but I think that, having treated many of the elder Lamperti's pupils and interrogated them very particularly upon this question, I may unhesitatingly affirm that the elder Lamperti was a strong advocate of the lower costal respiration, always arguing that the abdominal wall should remain quiet, or be slightly drawn in during inspiration. The evidence of Campanini, Jean de Reszke, and Clara Heyen is in support of the foregoing. Joal says if we except the works of Laget and Bonheur, we find nowhere the praise of clavicular breathing in men. The ancient method of the Paris conservatory and the works of Maunstein, Caruth, and Manuel Garcia, all advise thoracic respiration by the elevation of the ribs and drawing in of the abdomen.

If we take up any work on the voice and study the photographic appearances of the cords during the emission of certain notes, we remark that the cords are not vibrating longitudinally, but that their free borders approximate, touch, or overlap, and that the posterior opening of the chink is longer or shorter, and different in appearance for each note. I wish to put on record here my opinion of the absolute impossibility of photographing the vocal cords during the proper emission of tone, from the very fact that the laryngoscopic mirror placed in the pharynx interferes with the right focus of the respiratory attack, and it is only possible to observe the vocal cords in the photograph when the so-called stroke of the glottis is used in the emission of a note. The photographs of singers' cords, and the deductions which have been drawn from their appearance during the emission of different notes, only demonstrate, in every case that I have ever seen, that the larynx is elevated by the pulling up of the thyreoid, the cords relaxed, and the free borders more or less approximated.

If we ask a singer who is in the habit of using the so-called high chest method of costal respiration to take a note (the attack entirely taken from the cords and focused in the masque, bringing into play the harmonics lent by the sound-waves passing behind the uvula and soft palate), introducing the smallest possible size of mirror—so that the color given to the note by Nature's resonance pipes, the antra and nasal cavities, will be as little as possible interfered with—we are surprised to find that on the emission of every note of the soprano medium register the cords appear equidistant from each other throughout the entire extent that it is possible to see them.

The part which the intrinsic muscles of the larynx play in the tension of the vocal cords becomes an interesting study. It is very easy for us to see by the depression of the thyreoid how the cords must be elongated, but it is extremely difficult for us to comprehend the minute differences of tension caused by the movements of the thyreo-arytænoid and crico-arytænoid muscles. I have frequently been surprised, upon examination of the vocal cords with the head held down, the chin resting upon the chest, to find the cords present a beautiful pearly appearance, entirely homogeneous; but upon attempting to show the patient his own cords by an adjustment of double mirrors, the head being slightly thrown back, upon the same note the cords suddenly have become dusky, semi-congested, and striated. How much of this is due to the slight elevation of the thyreoid cartilage, and how much to the intrinsic muscles of the larynx, or to the relationship between the chink of the glottis and the trachea, it is difficult to determine. To a careful study of these differences of tension am I indebted for the discovery of a fact which I here write about for the first time, the appreciation of which fact, however, has entirely changed my treatment of the singing larynx, and has caused me to institute a system of tone exercises by which certain intrinsic muscles of the larynx are so strengthened that any medical application through the medium of sprays, probangs, and I may say instrumentation, has ofttimes been entirely done away with.

If we take a good-sized laryngoscopic mirror—No. 4, for example—and ask a patient to sing "E" or "Ah," the cords come into view for two reasons: First, the epiglottis becomes more perpendicular, allowing a better view of the bands; and, secondly, the cords themselves are on a more elevated plane, owing to a slight elevation of the thyreoid cartilage and consequent relaxation of the intrinsic tensors of the cords. In this position we remark that the free borders of the cords come together in the anterior and central portions, and we are able to study the initial tone attack, the membrane separating as the tone bursts through the closed chink. This picture may be said to be an imitation, on a small scale, of the so-called stroke of the glottis. In this method of producing a tone, the initial attack being upon the cords themselves, the central portions of the cords necessarily touch. The peculiar muscular equilibrium which is employed in this mode of attack invites a reflex elevation of the soft palate, cutting off the oral from the nasal cavities. As we look at this picture our minds revert to the singing teacher who commands her pupils to keep their palates up, sing in the back of their heads, and strike the glottis. Could ever villainy be more compounded? Let us take the same patient and require him to sing the same note, but in an entirely different way. We will first ask him to expand his upper chest, not necessarily by respiration, but by elevation of the superior ribs by a muscular effort, at the same time slightly drawing in the abdominal wall. We now introduce the smallest mirror and ask our patient to sing "A," pronounced as in law or maw. With this position of the larynx and muscular poise we observe two things: First, the epiglottis does not assume its most vertical aspect, not inclining as near the perpendicular, and the soft palate and uvula do not spring upward and backward to make the partition between the mouth and nasopharynx. Different in every respect is the tone produced by the cords, which may be assumed to vibrate longitudinally, but never touching each other in the middle portion, even in making the initial attack. The cords appear narrower, tenser, lower anteriorly, equidistant from each other, more homogeneous, and whiter in color.

These two pictures should be well considered, as they become the basis of criticism in distinguishing the correct and eliminating incorrect methods on the one hand in singers' voices, and of the greatest assistance to the laryngologist in correcting pathological conditions, the result of bad training. The proper appreciation of these opposite conditions and their effect on the quality of tone immediately calls our attention to the subject of respiration. Within the past three years the entire theory of musical education has changed in France, the explanation of this change being that there is at present a better appreciation of the influences bearing upon the production of tone and a better understanding of the physiology of the larynx, by reason of the advances made in laryngoscopy.

Modern teaching tends to cultivate tone harmonies and sympathy in the voice at the expense of brilliancy of execution. The same judgment should be exercised in the training of an individual who proposes to make singing his or her art as should be employed in advising the painter that his special *forte* lies in landscapes rich in color, in which he may give expression to his imaginative genius, rather than to the sterner facsimile of portraiture.

How many singers we hear whose technique and brilliant staccato in the Bell Song of Lakme calls forth our admiration and amazement, but who are absolutely unable to put any sympathy whatsoever into the simplest ballad! We should study color harmonies in music in the same way that they must be studied in painting. There is no rule for the palpitating sunlight effects and prismatic play of colors in the school of Claude Monet; it is certainly a subtle feeling which is given by an ingenious mingling of pure spectrum colors. In the human voice that added coloring of tone which appeals to the heart as well as to the ear of the listener must be brought about by the employment of those harmonics which are added to the original tone by intervibrations within the accessory cavities of the nasal passages. To sing *dans le masque*, as the French say, is to give this added richness to the initial tone; but to sing in this manner requires the soft palate and uvula to be lowered in the production of tone. Likewise, to make the purest initial tone from the cords, we must get the utmost possible tension, which may only be arrived at when the thyreoid is depressed, for, in proportion as the thyreoid is elevated, the cords tend to assume the base of a right-angle triangle instead of its hypotenuse. Several elements besides this enter into the question of greatest possible tension, one of the most important of which is that the trachea be drawn down to assume the position that it takes when the apices of the lungs are filled to their greatest extent with air. One of the greatest singers the world has ever known told me that the reason that he adopted a fixed high chest was that he had found, after the removal of a papilloma from one of his cords, that the only way in which he could be at all sure of his voice while singing was by the maintenance of the so-called high chest respiration. This is easily explained by the fact that in this position, the upper ribs remaining fixed, the apices of the lungs always remain in contact with the thoracic wall, expanded to their fullest extent, the cords being kept in their state of greatest possible tension. In this position the breathing becomes entirely inferior costal and diaphragmatic. The position of the thorax, as indicated above, permits the lungs to expand to their fullest extent, thus adding a secondary resonance to the voice from below—a sort of complementary *timbre*, the fixed upper thorax allowing of the least possible change of color during tone production.

It is this combination of facial and thoracic tone fortification which gives thee normous carrying power to tones produced by this method. For a number of years before I made a special study and estimated the great significance of these factors in singing, I deluged the throats of singers with sedative and astringent sprays when their cords appeared congested and swollen, often presenting nodules in their center which I had never previously recognized as being due entirely to singing with an improperly poised larynx.

I may cite several cases to show you the difference, from a medical standpoint, in the treatment of the singer's throat, where I now substitute respiratory and tone exercise for the amelioration of conditions that I have always been taught were only to be cured by rest and the diligent use of drugs. The cases I cite are typical of a class of singers that I have treated with equally good results since I have made a particular study of the peculiar value of the proper tone production in the human voice.

Case I.—The first day of January last I was consulted by Miss F., aged twenty-three years, who had had a contralto voice of large power which she had employed constantly for several years, and had finally, after a prolonged concert tour with a well-known orchestra, entirely broken down. Her cords were dark red, with a slight nodule in the middle of either band; she complained of great pain in producing her notes, and her medium register had no power in it whatsoever. She had been told by two of the best authorities on the throat that she must not sing a note for a year, and must have her cords painted with astringent solutions and tone up her general health. Upon testing her voice, I remarked an extremely breathy tone and clavicular respiration.

In accordance with the principles which I have attempted to demonstrate, I forbade her speaking a single word for a week, but placed her at once upon the so-called inferior costal respiration, maintaining a high chest, and giving her directions to take a medium "C" with the chin almost resting upon the clavicle, singing the word "ma" for five minutes of each hour of the day, the tone first to be focused in the face with the mouth closed, and the attack to break upon the lips as much as possible on opening the mouth. At the end of seven days the cords, instead of presenting an elliptical appearance, were straight, and the nodule was so far rotated upward on either cord that it did not touch the nodule of the opposite side in the emission of tone. At the end of the week this young lady, who considered her voice hopelessly destroyed, having acquired a new method of respiration, sang in a concert. She has since sung regularly in church, in many oratorios during the winter, and is at present singing three times a week in grand opera, learning new rôles continually, apparently perfectly restored. She tells me her voice is far more powerful than she had ever dreamed of.

Case II.—Miss P. H. consulted me on March 2d in great distress. She was obliged to sing in a comic opera on that evening or close the theater. Examination showed inflamed and bulged cords with great hoarseness in the speaking voice; middle register impossible, but the high notes obtained with great effort. I sent her at once to my assistant, who gave her exercises to maintain tension, and at the end of an hour's work with tension exercises and inferior costal breathing the cords responded and she sang with ease.

Case III.—Miss H. B. consulted me in May, having lost her position as prima donna by reason of loss of voice. Had been constantly treated. Her cords showed the nodules of attrition, the result of the employment of the *coup de glotte* and faulty respiration. In this case a week's work caused the nodules to disappear. She adopted a proper laryngeal poise and again assumed the leading rôle.

Observation.—In this class of cases rest causes a relaxation of the cords and singing becomes impossible for some time, whereas constant work, with tension of the cords and non-approximation of the same, gives immediate relief.

Case IV.—Fräulein K. consulted me in the spring. Her cords appeared swollen and the membrane was injured but not hyperæmic. Had been obliged to cancel her engagements and return to New York for treatment. I recognized the familiar picture and sent her to my assistant, who cured her in a week without other treatment than the establishment of a proper laryngeal poise.

With many cases like these which I might cite, may I not be excused in my assumption in calling attention to what I consider the most important ground principle of the singer's art—namely, the proper employment of the muscles of respiration, the poise given the cords, and the proper use of the intrinsic muscles of the larynx, not forgetting the bringing into play of the accessory cavities of the face, which lend so much color to the tone, removing entirely from the cords the deleterious effects of an improper initial attack?

To rehearse briefly the deductions which I have attempted to draw from my argument, I maintain that the best method of respiration is the inferior costal or diaphragmatic, faithfully maintaining the elevation of the upper ribs without raising the shoulders. Next in importance is the depression of the thyreoid cartilage, brought about through the agency of the crico-thyreoid muscles, and the pulling down of the trachea, by increasing the capacity of the upper lobes of the lungs—anatomically speaking, a pose causing the thyreo-arytænoid muscles to produce tension, instead of the crico-arytænoids. Be careful that the initial attack is removed entirely from the cords. Lower the uvula and soft palate, that the sound-waves may obtain their intercurrent vibrations or harmonics, by partly passing into the nasal cavities from behind. Let us not fall into the error that the roof of the mouth alone is the sounding board of the singing voice, for without that added richness and *timbre* to be given by calling into play Nature's resonance pipes, the nose and its accessory cavities, we may sing, but the singing is at the expense of the cords, and the life of the voice is necessarily shortened.

If I have said enough to arouse a new interest in what I consider a most necessary accessory to laryngology, I shall feel amply repaid for my endeavors to set the theme before you in a clear and comprehensive manner.

A GUIDE TO

THE STUDY OF SURGICAL DIAGNOSIS DURING BEDSIDE INSTRUCTION.

FOR THE USE OF SENIOR STUDENTS.

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During several years of clinical teaching the writer has been impressed with the difficulties met with by students in arriving at correct diagnoses of cases presented, and their proneness to jump at conclusions often after a most superficial examination and without the slightest knowledge of the causes leading to the disease or injury under consideration.

While, no doubt, those of large clinical experience can very often make a correct diagnosis from general appearances, it is obviously unwise to allow a student to do so.

I think that all clinical teachers will agree with me that there has been a want of system in treating the subject with the student; and that the student, having only his text-books to refer to—and in these finding nothing to his purpose—looks to his teacher entirely for such instruction.

The time at the disposal of the teacher being limited, it becomes a question of how best to present the subject to the student in a concise form and still completely enough to impress upon him the necessity of and reasons for using care and thoroughness in taking histories; and also to give him a foundation upon which he can build a system which may be followed while in college and afterward with advantage to himself and his patients.

After a thorough trial of the following method, I am emboldened to present it to students and teachers as the one which I have found best adapted to the needs of both. The method presupposes a knowledge of surgery such as the student entering upon his senior year has already acquired from text-books, recitations, and didactic lectures;

and it will be found applicable to all surgical cases in whatever order they may present themselves for clinical use.

PRELIMINARY QUESTIONS.

1. Name of patient. 2. Address. 3. Nativity. 4. Age. 5. Sex. 6. Color. 7. Social state. 8. Business.

All of the above questions are important and should be asked not only for record, but as having a possible bearing on the diagnosis. The answers to the last six questions in particular have a value which should not allow them to be overlooked.

I. *Family History.*—1. Father, mother: If living, the age and state of health of each should be inquired into. If dead, the age at death and causes. In some cases, where knowledge of hereditary disease in the parents is denied, the histories of the grandparents, uncles, and aunts on both sides may lead to the required information.

2. Brothers, sisters: The number living and the state of health of each. The number dead, respective ages at death, and causes of death.

3. Children: Number living, ages, state of health of each. Number dead, ages at death, causes of death. Miscarriages—number, at what months.

II. *Personal History.*—Under this head inquiries should be made concerning—

1. Former diseases and their treatment.
2. Former injuries and their treatment.
3. General health.

Often a knowledge of a former disease or injury will be found useful. Sometimes a patient not able to give positive information regarding a disease or injury will, from his description of the treatment pursued, enable the examiner to make a correct surmise as to what it may have been.

III. *History of Present Disease or Injury.*—1. If disease: *a.* When it began. *b.* Where it began. *c.* How it began. *d.* Subsequent course. *e.* Former treatment and operations.

2. If injury: *a.* When it occurred. *b.* How it occurred. *c.* Part injured. *d.* Physical and mental condition immediately after. *e.* Subsequent course and treatment.

The value of nearly all of these questions is apparent. Questions *d* will be found very necessary; questions *e*, besides their diagnostic value, will, in cases where many remedies have been used with or without benefit, be of help in outlining the treatment.

IV. *Physical Examination.*—1. *a.* Pulse. *b.* Temperature. *c.* Respirations.

2. Inspection: *a.* Color. *b.* Size. *c.* Contour. *d.* Comparison with opposite side; when the member or organ injured or diseased has a duplicate, this should always be made. *e.* Remarks as to sinuses, ulcers, discharges, eruptions, etc.

3. Function: *a.* The presence or absence of active and passive motion. *b.* Use of the member or organ.

4. Palpation: Whatever may be perceived by means of the finger tips. The presence or absence of pain, crepitus, change of color on pressure, fluctuation, œdema, deep irregularities, undue consistence, mobility, etc.

5. Percussion: *a.* Superficial. *b.* Deep.

6. Manipulation: Whatever may be perceived by means of the hands. The presence or absence of motion, mobility, pain, crepitus, etc.

7. Localization: In employing palpation, percussion, and manipulation, the necessity for localization should be borne in mind. Tumors should be mapped out, particular spots of pain noted; points at which crepitus is most distinct, points of false motion, degrees of mobility in various parts, and the extent and direction of irregularities, pain and false motion noted, etc.

8. Instrumentation: This includes the use of the hypodermic syringe, probes, sounds, electrodes, electric lights, stethoscope, tape-measure, and all other diagnostic instruments.

9. Examination of excretions: *a.* Pus or other discharges. *b.* Urine. *c.* Fæces.

10. Microscopical examination: *a.* Pus or other discharges. *b.* Urine. *c.* Fæces. *d.* Growths, etc.

V. *Diagnosis.*—

1. The examiner will now have a mass of information gathered from the history and examination of the case which may be found to apply to one or more of several diseases or injuries. If he will select the two, three, or four diseases or injuries which are more particularly indicated, and group under the head of each the information especially applying to *it*, it will be found that, in the large majority of cases, the summary will lead him to a correct diagnosis.

Great care, however, must be taken not to give undue prominence to a minor symptom.

In the more difficult cases it is proper to use the method of exclusion.

2. Exclusion: Every disease or injury has one or more symptoms which are characteristic, perhaps pathognomonic, and the absence of these symptoms in a particular case may rightly lead one to exclude that disease or injury, and so, working backward from a knowledge of what *should* be if the disease were such, we are able eventually to exclude all that it is not and make a diagnosis by exclusion.

VI. *Prognosis.*—1. Immediate results. 2. Distant results. 3. Time.

In stating the prognosis it is necessary to give an opinion as to the immediate outcome of the case, whether it is to be rapidly fatal or not, whether it means partial or complete disability, and the probable length of time to a fatal ending or comparative cure.

The ultimate results will be asked for, and one should be prepared to state what they will be regarding life, usefulness, comfort, and time.

VII. *Treatment.*—1. Primary: *a.* General. *b.* Local.

2. Intermediary: *a.* General. *b.* Local.

3. Secondary: *a.* General. *b.* Local.

The primary treatment refers more particularly to injuries, and consists essentially of the aid which is given immediately after its reception. Generally, shock is to be treated; locally, hæmorrhage controlled, temporary splints or other dressings applied, etc.

The intermediary treatment refers to disease or injury, and is that which is given with a view to fitting the patient for the secondary treatment. Generally, in disease, a course of tonics, proper food and hygiene, preliminary to an operation; in injury, the treatment of shock and general conditions. Locally, in disease or injury, temporizing dressings.

The secondary treatment refers to permanent or final treatment. In disease, perhaps an operation; in injury, permanent dressings. The use of the terms general and local will be readily understood.

VIII. *Classification of Cases.*—One having carefully considered the foregoing plan will see that all cases may be assigned to one of four classes:

1. Cases of injury. Of this class a fracture is a good type. It is rarely necessary in considering a fracture to inquire into the family history or into what diseases the patient may have had. Infrequently, however, one may find such knowledge of greatest importance, as is witnessed by cases of delayed union after fracture in syphilitics.

2. Cases of acquired disease. The tertiary lesions of syphilis (bone necroses, gummata) form a good type for study. In these the personal history of disease is of great importance, the family history being useful only secondarily or for purposes of exclusion.

3. Cases of hereditary disease. Tubercular disease in its various forms is perhaps the most common and usually furnishes a good type. The family history in this class must be very complete and is of fully as much importance as the personal history of disease.

4. Mixed cases. Under this head may be placed—

a. Cases of injury complicated by acquired or hereditary disease.

b. Cases of disease complicated by injury or some other acquired or hereditary disease than the one originally under observation.

In conclusion, it is well to state that the examiner must be thorough and persistent in his interrogations. This caution applies especially to the management of hospital and dispensary patients. Aside from the wish to deceive or withhold information which a few patients may exhibit, the average intelligence of such patients being low, the questions must be explicit and perhaps oft repeated and their form changed to elicit the desired knowledge.

332 LEXINGTON AVENUE.

THE EYE TREATMENT OF EPILEPTICS.

A CRITICAL REVIEW OF CERTAIN FACTORS THAT MAY LEAD TO CONVULSIVE SEIZURES, AND THE TREATMENT OF EPILEPSY WITHOUT DRUGS.

BY AMBROSE L. RANNEY, A. M., M. D.

(*Continued from page 51.*)

CASE XIV. This case is not as yet of much value in determining the results of eye treatment upon epilepsy; but it resembles Case XIII very closely and illustrates that a perfectly normal refraction (emmetropia) may coexist with a *marked heterophoria almost totally latent.* The terrible accident that befell this patient has delayed until recently further investigation of the heterophoria.

Case XV was an extremely interesting one to me for the following reasons: The epilepsy had been of the nocturnal type; it had not been benefited by bromides; the patient had inherited (as shown by my case records) marked tendencies, on both the maternal and paternal side, to eye defects; one sister had been a source of great anxiety to the parents for many years from extreme nervous debility that seemed incurable, and she had been restored to perfect health while under my care through eye treatment without drugs; finally, one brother had manifested epileptic tendencies.

A perfect recovery from a life-long dependence upon cathartics is also another evidence of the improved nervous tone of this patient.

Case XVI is yet under observation. It is one of the most difficult cases to solve that I have ever encountered. Thus far the results of eye treatment seem to have been highly satisfactory.

Case XVII illustrates some excellent results in correcting heterophoria, with apparently negative results upon the epileptic seizures. The seizures are so infrequent that it is difficult to tell just what the ultimate effects of the eye treatment may be. I am inclined to suspect that some form of uterine or ovarian reflex irritation exists at present in this case.

Case XVIII shows that excellent results from the oculistic standpoint have been obtained, with equally marked benefits to the patient in respect to her epileptic seizures.

Case XIX illustrates extreme and unequal refractive errors in addition to extreme heterophoria. The results have thus far been quite encouraging.

Case XX shows that better results have followed eye treatment than have ever been obtained by drugs. There is reason to hope for permanent relief from epileptic seizures.

Case XXI is not as much improved as some of the preceding cases, but he is as well without drugs as he ever was when under their influence.

Part of the operative work in this case was done before I saw the patient.

Cases XXII and XXIII are incorporated in this brochure (in spite of the fact that the results of eye treatment are still in abeyance on account of the short interval that has elapsed since the heterophoria has been partially rectified) because they illustrate one important point—viz., that *very extreme latent heterophoria can exist as a cause of convulsive seizures independently of any marked error of refraction.*

In Case XXII it was deemed wise to give +1·00 s. glass for constant wear; but in Case XXIII almost absolute emmetropia was found.

I do not personally consider that any ground for argument exists to-day regarding the claim heretofore made by some oculists of repute—viz., "that all heterophoria is due solely to errors of refraction." If such a statement is to-day believed by any one who has carefully investigated heterophoria, I think that Cases XXV, XXIV, XXIII, XVII, XV, XIV, XIII, VI, and I ought to disprove it.

Case XXIV was attended with outbreaks of apparent epileptic insanity, in addition to periodical attacks of continuous epileptic seizures of so violent a form as to justify the use of chloroform. Very frequent attacks of *petit mal* would also occur in spite of large doses of bromide salts.

The refractive errors were insignificant in this case, but the latent heterophoria was extreme. The case is incorporated chiefly to illustrate this point, as the eye treatment was abandoned before any beneficial results could reasonably be expected.

Case XXV again illustrates extreme latent heterophoria, independent of any marked error of refraction. The results in this case can not as yet be regarded as final. Some latent heterophoria still manifests itself at times.

In concluding this article (prior to reporting the detailed histories of twenty-five cases of epilepsy) I present a table that may possibly shed some light upon the eye conditions * that are apt to be encountered in patients afflicted with this malady:

Summary of the Eye Defects detected in the Cases reported.

	No. of cases.	Per cent.	Remarks.
Esophoria...........	23	92	Corrected in every case by graduated tenotomies upon the interni or advancements of the externi.
Exophoria...........	2	8	Corrected in every case by graduated tenotomies upon the externi.
Hyperphoria..........	7	28	Corrected in every case by graduated tenotomies.
Heterophoria.........	25	100	Is rarely absent in epileptic subjects.
Orthophoria..........	..	..	I regard this as an extremely rare condition in epileptics.
Hypermetropia	19	76	Corrected in most cases by glasses for constant wear.
Myopia..............	2	8	Corrected by glasses if in excess of two dioptres.
Myopic astigmatism ...	3	12	Fully corrected by glasses in every case.
Hyperopic astigmatism.	6	24	Fully corrected by glasses in every case.
Emmetropia..........	4	16	A somewhat rare condition, even in health.†

At a late meeting of the Ophthalmological Society of the United Kingdom a report of the refractive conditions of epileptics was made by Mr. Dodd (based upon the examinations of a hundred epileptic subjects as contrasted with similar tests upon fifty healthy persons). The effects of treatment by a correction of the refraction alone by glasses were also reported.

Out of a hundred epileptic subjects, seventy-five were found to require glasses and were directed to wear them. Only fifty two of these patients were faithful in obeying the instructions. Of these fifty-two, thirteen had no attacks for an interval of from one to two months, thirty-six were more or less benefited, and three were not apparently influenced by the correction of the refraction.

The conclusions drawn by Mr. Dodd were: (1) That *errors of refraction may excite epileptic seizures;* (2) that the *correction of refraction is of value in the treatment of epilepsy;* and (3) that *other sources of irritation may be suspected when a correction of refraction fails to afford marked relief.* ‡

To any one familiar with the later methods of investigation and treatment of heterophoria the *investigations of Mr. Dodd must seem singularly incomplete.* Yet it is interesting to note that the correction of refraction alone accomplished enough in cases of chronic epilepsy to warrant a verdict in favor of the eye treatment.

I admit that any deductions regarding the eye tests in epileptic subjects derived from twenty-five cases can not be regarded as final; still I find that the preceding table indicates what to my mind would be about the average results of my personal examinations and treatment of quite a large number of epileptics during the past ten years (a period when I first began to record, in every case, the results of examinations of the eyes).

CONCLUSIONS.

I would formulate my conclusions, as the total result of my observations of the eyes of epileptics, as follows:

1. In epilepsy I regard an examination of the eyes (for errors of refraction) and of the eye muscles (for heterophoria) as the first and perhaps the most important step toward a search for sources of reflex nervous disturbance.

2. No final conclusion should be reached regarding the presence or absence of heterophoria until sufficient time, patience, and skill has been bestowed upon the investigation by one who is thoroughly familiar with and practices the *later methods* for the *determination of "latent" heterophoria.*

3. All preparations of bromides and other drugs that tend to control the seizures should be withheld, as a rule, from an epileptic patient until all possible sources of reflex irritation have been scientifically sought for and, as far as possible, relieved.

There may be justifiable reasons, to my mind, for *exceptional departures* from this rule; but I wish to emphatically raise my voice here in protest against the prevalent system of drugging epileptic patients from the date of the appearance of the first fit without any attempts being made to ascertain what the causes of the epilepsy may be.

4. I strongly advocate the *employment of atropine in every case* before a final decision is reached regarding the refraction of an eye.

I also believe that in epileptic cases it is wise to insure a full correction of any existing astigmatism (by glasses to be worn constantly in well-fitted spectacle frames), and as near a full correction by spherical glasses of any latent hypermetropia that is detected as the patient can be made to tolerate, even if atropine has to be instilled at intervals into the eyes of the patient for several weeks to prevent a return of ciliary spasm.

I have observed many cases of chronic epilepsy that have been relieved of all convulsive seizures so long as the full effect of atropine upon the ciliary muscle was maintained.

5. *No promises that absolute cure can be effected by eye treatment should ever be made to an epileptic;* but it is usually safe for the physician and patient to hope that a radical correction of marked heterophoria and abnormal refraction will eventually be followed by decided and permanent benefits.

6. The results in all cases thus far treated by me seem

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* The meaning of the terms used in this table and the histories that follow have been given in this article on a preceding page.

† In this collection of cases the percentage of emmetropia appears to be greatly in excess of what is usually encountered.

‡ Italics my own.

to warrant the conclusion that at least *ninety per cent. of chronic epileptics have been better without bromides*, after a satisfactory correction of their eye defects, than they ever were when subjected to the influence of drugs. *Some have apparently been cured.* (See Cases I, II, IV, V, VI, VII, X, XIII, and XV.)

It should be remembered that a victim to chronic epilepsy who is rendered by any treatment as free from attacks without the bromides as when under their deleterious influence has been *very markedly benefited;* again, that if a marked diminution of the attacks has been effected, the patient has double cause for gratitude; finally, that if the attacks are arrested *in toto* without drugs, it is to-day one of the most remarkable facts recorded in medical literature.

7. In cases where negative results have been observed in spite of a satisfactory investigation and correction of marked heterophoria and abnormities of refraction, I would deem it wise before resorting to drugs for epileptic seizures to search for other sources of reflex peripheral irritation (such, for example, as bad teeth, phimosis, rectal or uterine disease, scars, etc.).

Furthermore, the detection of chronic kidney disease, syphilis, organic brain lesions, and depression of the skull, is most important prior to the beginning of eye treatment or a search for other forms of peripheral reflex disturbances.

8. The treatment of heterophoria by *prismatic glasses alone is not curative;* nor, in my opinion, are very marked beneficial results to be expected from them. Prismatic glasses are valuable aids, however, in determining the existence and amount of "latent" heterophoria prior to the radical correction of such defects by graduated tenotomies.

9. *The duration of the eye treatment of epilepsy varies with the eye problems encountered.*

The establishment of orthophoria is not commonly effected in epileptics inside of one year; and long intervals of rest between the surgical steps may be demanded and thus extend this limit of time to two or even three years.

For the past five years I have refused to begin work upon the eyes of any epileptic unless I was assured that I could control the patient for a period of at least twelve months, and see the patient at such intervals as I deemed necessary during that period. It is better in this work "to be sure than sorry," and experience has taught me that it is much safer to do it slowly than rapidly.

With a full knowledge of the method, its intricacies, and its difficulties, *conclusions should never be too hastily arrived at* in any given case. Those who have had the largest experience may occasionally make mistakes in judgment when a peculiarly complex problem is presented for solution. How much easier is it, therefore, for one with a limited experience to fall into error! The story is told that a selection for a pilot of a vessel laden with precious merchandise which was to enter a harbor full of sunken ledges and sandbars was once being made. One by one the applicants told a tale of uninterrupted successes. Finally one pilot was accepted simply because he said, "I ought to know the channel, as I've wrecked a ship on every rock in this harbor."

So it is with many cases of epilepsy, chorea, insanity, and kindred nervous affections. These patients have, as a rule, acquired and constantly practiced from birth *certain faulty combinations of the various eye muscles* in order to enable them to use the eyes together.

They are often able, by the aid of such unnatural combinations, to *simulate* a condition of apparent equilibrium of adjustment of the eyes, although a very serious expenditure of nerve force may be demanded of them in order to do so. They are naturally unconscious of the eye-strain, because they think everybody does as they do in order to see. They often have no eye symptoms. They practice these "tricks of adjustment" instinctively, not as an act of volition; and they have generally to be taught, by the aid of prismatic glasses and other recognized steps, to abandon them and thus to disclose the actual maladjustment of their eye-muscles which has entailed upon them this long-continued leak of nerve force.

10. Too much stress can not be laid upon the importance of accurately centering all spherical and cylindrical glasses to the pupils when prescribed.

An imperfectly fitted frame may prove a source of great injury to a patient.

Moreover, a decentered glass may often lead a careful observer into serious error respecting heterophoria.

It is remarkable how few opticians are properly educated in the fitting of frames. A casual glance at the eye-glasses and spectacles worn at social gatherings and in street cars, theatres, etc., by people able to purchase of the best opticians, will demonstrate the statement that but a very small percentage wear glasses that are even an approach to the proper relationship to the pupils.

It has been a rule in my office for years to allow no patient to wear a glass that I have not personally tested and passed upon as properly ground and centered to the pupils. I also instruct each patient regarding the necessity of having the frames straightened when bent or whenever the lenses tend to droop.

I do not believe in decentering any glass, even intentionally to take the place of a prism.

Some months ago a patient took the long trip from Tacoma to New York in order to consult me regarding a sudden change in the vision of one eye that greatly alarmed him. I had previously given him for constant wear cylindrical glasses in a spectacle frame and he had changed them to a pair of eye-glasses. The bending of the frame had changed the axis of the cylinder of the right eye. Within a space of five minutes this was corrected, and all his alarm disappeared at once because his vision immediately became normal.

11. The objections that are raised before patients by many physicians and some oculists to the performance of a graduated tenotomy upon an eye muscle "because of its risk, danger of overcorrection, etc.," too frequently cause unnecessary alarm and often prevent patients from obtaining the relief that is within their grasp, and which prismatic glasses have not and will not afford.

Since the employment of cocaine as a local anæsthetic the patient *suffers no pain during this operation* and but little discomfort after it.

Furthermore, the operation as now performed does not necessitate any confinement to the house, and all surgical dressings to the eye are avoided.

That the successful operator must possess skill and a high grade of technique (acquired by constant practice in that special line of surgery) is apparent; but I believe that the danger of overcorrection is very small in operating properly for heterophoria, and, in the hands of an expert, an overcorrection is very readily controlled and rectified. I do not recall a case within the past eight years where I have had a moment's anxiety resulting from an overcorrection, although I have in that time performed at least one thousand graduated tenotomies upon the muscles of the orbit.

Case I.—Mr. B., aged twenty-six years, machinist, married. Patient was referred to me by Dr. E. W. Hedges, of Plainfield, N. J., on July 30, 1892.

Family History.—No hereditary tendencies to nervous troubles. Mother has headaches. One uncle had phthisis.

History of the Case.—Was perfectly well up to the age of twenty-four. Had an attack of *petit mal* with "spitting of blood." Had five attacks during the next twelve months. They then began to be frequent, and within the next year six or seven attacks daily were liable to occur. Bromides were begun two months ago and have given little or no relief. From two to ten attacks daily now occur. The patient "does not fall in these attacks, but twitches some and becomes stiff." He is only momentarily unconscious and often can talk. His eyes feel very queer during the attack, the pupils dilate, and the conjunctiva is often inflamed after the attack.

Patient does not smoke, nor drink anything but beer with his meals. Has never had any venereal disease. He sleeps well and has a good appetite. Has no marked tendency toward constipation of the bowels. No history of an exciting cause for the seizures can be elicited. Urine normal.

Eye Defects.—At the first examination, an apparent slight hyperopic astigmatism; but under atropine a *latent hypermetropia* of only one half dioptre.

Apparent esophoria of 1° at first visit, but within a few weeks 8° of esophoria disclosed itself, with a marked outward jump when the exclusion test was employed. With the Maddox-cylinder test, esophoria of 10°; adduction, 33°; abduction, 2°; sursumduction—right, 2°; left, 2°; no hyperphoria.

This patient, on cessation of bromides, had thirty-nine attacks during first week, and sixty-seven attacks during second week. During part of this time he was wearing prismatic glasses, for the purpose of developing the "latent" esophoria that disclosed itself with great rapidity.

Treatment and Results.—Three graduated tenotomies have been performed upon this patient for the relief of his esophoria, as it disclosed itself from time to time. From the first operation the attacks became less frequent and the patient greatly improved in his general buoyancy of spirits.

The last record of any eye tests of this patient was made on April 15, 1893. He had been entirely free from any attacks for thirteen weeks. His adduction was 33°; abduction, 7°; sursumduction—right, 2°+; left, 2°+; no hyperphoria; esophoria, 0·75°.

A letter from him dated October 6, 1893, makes no mention of any attack up to that date—*a period of over ten months without seizures, and with a total cessation from all drugs.*

A subsequent letter, dated November 19, 1893, says: "With the greatest of pleasure, I can say that I have not since you saw me last had any attacks, or even the slightest symptom of any."

Case II.—Mr. F., single, accountant, aged twenty-seven years. Patient was referred to me by Dr. J. B. Bissell, of New York, on September 2, 1892.

Family History.—All mother's family died of phthisis except one. All maternal relatives have headaches and are very nervous.

History of the Case.—Patient has always been exemplary in his habits; neither smokes nor drinks, and goes to bed at regular hours.

Until the age of twelve years the patient was apparently well and strong. During that year he fell from the woodshed on to the ice and had a hæmorrhage of nearly a quart from the lungs. An epileptic convulsion followed. At intervals, for a long time, during the night he would have peculiar attacks associated with a peculiarly hard breathing and slight tremor. He has always been a victim to headache. These at times were terribly severe.

From the date of his first convulsion (fifteen years ago) this patient was placed upon the bromide treatment, which he has kept up ever since with varying doses. He has taken chiefly a combination of bromide of sodium and ammonium.

He has been a chronic dyspeptic for years. No evidence of depression or injury to the skull exists.

In spite of bromides, severe epileptic seizures would occasionally occur. During the first seven months of 1892 patient had four epileptic seizures at intervals of about two months apart.

He consulted Professor E. G. Janeway, of New York, in the summer of 1892, who advised him to see an oculist and continue his bromides. Week myopic cylinders were prescribed by Dr. St. John, of Hartford, Conn., which he has worn constantly for the past few months. His dyspeptic troubles seemed to be much lessened by the use of glasses, but an epileptic attack followed in about five weeks in spite of his bromides.

Eye Defects.—Under atropine this patient disclosed the following refractive condition: O. D., V. $\frac{20}{20}$ with + 0·50 c., axis 90°; O. S., V. $\frac{20}{20}$ with — 0·50 s. ○ — 0·50 c., axis 180°. He also showed left hyperphoria, 1°; esophoria, 2°; adduction, 11°; abduction, 5° —; sursumduction—right, 2° +; left, 3°.

On the following day the effect of esophoria prisms was tried upon this patient. He showed within three hours unconquerable homonymous diplopia (with a red glass) and 6° of esophoria. Abduction, 0°.

Treatment and Results.—Graduated tenotomies were performed upon both interni within a space of two weeks, after which he showed left hyperphoria, 0·5°; esophoria, 0·75°; adduction, 21°; abduction, 7°; sursumduction—right, 2°; left, 3°.

Six weeks afterward he reported that his digestion was very much improved; that he had had no attacks for six weeks, and taken no bromide for four weeks. He was wearing constantly a full correction for his refraction.

Later on an investigation of his hyperphoria disclosed 4° of left hyperphoria and a 3° prism was incorporated in his glass. At this time he showed esophoria, 0·5°; adduction, 18°; abduction, 5°+; sursumduction—right, 0°; left, 6°.

When four months had passed without an attack, the patient again visited my office. He reported that all evidence of chronic dyspepsia had absolutely disappeared and that he no longer had any distress in his head.

If his glasses are removed he has unconquerable vertical diplopia. During all this period he had used his eyes for bookkeeping throughout the entire day. His eye tests showed: Left hyperphoria, 4·5°; esophoria, 0·5°; adduction, 17°; abduction, 5° +; sursumduction—right, 0°; left, 8°—.

The right inferior rectus was now operated upon for the correction of the hyperphoria. After this operation the patient showed: Left hyperphoria, 0·5°; esophoria, 0·5°.

Three days later there was adduction, 23°; abduction, 5° +; sursumduction—right, 3° —; left, 3° —; left hyperphoria, 0·25°; esophoria, 0·5°.

A letter, dated March 13, 1893, says: "Saturday will be *seven months since the last attack*, and I am feeling simply immense."

On April 17, 1893, the following muscular tests were recorded: Vision $\frac{20}{20}$ in each eye with the glasses prescribed; no vertical or lateral muscular defect; adduction, 32°; abduction, 7° +; sursumduction—right, 2°; left, 2° +.

Since the last note the patient reports that on July 23, 1893, he had a very slight seizure on going to bed, the first and only one he has had since coming under my care. He has had none since (up to January 1, 1894).

Case III.—Master G., aged ten years. Referred to me by Dr. A. D. Stewart, of Port Byron, N. Y., on May 5, 1893.

Family History.—The father came with the boy and was a picture of robust health. No epilepsy had appeared in his ancestry.

History of the Case.—This boy came to my office accompanied by his father and Dr. Stewart, who led him along by the hand as he would a child of much younger years. He had a peculiar vacant, semi-idiotic expression that strongly indicated his enfeebled mental condition. His head was one of those peculiar heads that was nearly spherical, with eyes set wide apart, a small nose, and mouth half open. He was singularly sluggish both in his mind and in his movements, and was justly regarded by the doctor and by his parent as partially idiotic. His father was a farmer, and the boy had been brought up on the farm.

The clinical history, as well as the family history, was crude and imperfect. The boy had had innumerable epileptic fits, which nothing had seemed to relieve. On his way from Elmira, N. Y., to New York city he had had *several attacks on the train*, and had sat throughout the trip without hardly moving from his seat, except when in convulsion. He evinced no interest in any of his surroundings, did not look out of the window at the landscape, and in all other ways manifested his defective mental condition.

Eye Defects.—A casual glance at the patient showed that he had an approach to double convergent strabismus. Vision, $\frac{20}{20}$ in each eye before atropine was instilled. Under homatropine a latent hypermetropia of +1·75 dioptres.

On exclusion of either eye a marked jump outward confirmed the existence of esophoria of a high degree. All attempts to get accurate muscular tests proved futile, as the patient suppressed images in spite of all my efforts to make him show his ocular maladjustment. As nearly as I could make out, 10° of manifest esophoria, at least, existed.

A free graduated tenotomy was performed upon both interni on the same day, with the effect of causing a remarkable change in the looks of the boy's eyes. A full correction of the hypermetropia (+1·75 s.) was ordered for constant wear, in strong spectacle frames, and an atropine solution ordered for instillation into the eyes.

On the following day I succeeded in getting the following tests with fair accuracy, the suppression of images having been partially overcome: Esophoria, 5°; left hyperphoria, 1°; abduction, 6° +. *No jump on exclusion of either eye.*

The father and Dr. Stewart reported that, on the day of the operations (within two hours following them), the boy had amused himself all the afternoon counting pennies and playing with marbles, that a remarkable change seemed to take place almost immediately in his mental apathy, and that he had not seemed as bright in many months.

Within the next few days the boy's mental condition changed still more wonderfully for the better. He would enter my office with a laughing face, walk up to me, and shake hands without being told to do so; would talk to me about things he had seen, and showed the greatest interest concerning various instruments, etc., in my office.

He had had no convulsions for several consecutive days.

As I felt sure that (with the disappearance of atropine) the strong spherical glasses would be apt to cause the boy serious discomfort, and as no immediate prospect for further operative work seemed probable, I advised Dr. Stewart to take the boy home and to keep up instillation of atropine in the eyes at intervals, whenever the glasses caused the boy any discomfort. I also gave him a letter to an oculist near by in order that a specialist might make tests of the boy's eyes from time to time and inform me of his progress.

On the trip home, a report states that "the boy was so frolicsome and inquisitive on the train that he required constant supervision and care." The contrast was so great with his demeanor during his trip to New York as to excite the greatest surprise. No convulsions occurred during the trip.

A most pathetic scene occurred at the depot on the arrival of this boy, his mother becoming hysterical over what she termed "his resurrection to health and mind."

The following letter was received on August 14, 1893, from the oculist to whom he was referred by me: "Dear Dr. Ranney: You will be glad to hear that your patient, R. G., of Port Byron, *has had no return of his epileptic attacks* so far. His father reports him much less restless and better tempered. At the end of June, after the use of atropia for a week, I found 2·50 D. of hypermetropia, and consequently increased the strength of his glasses to + 2·25 D. With these his V. = $\frac{6}{6}$; there is esophoria of 2° or 3°, certainly not more; and abduction of 8°. The boy keeps his mouth open a good deal of the time, and I think possibly this and his decidedly 'weak' expression may be due to post-nasal adenöids. I propose to have this point settled when he comes to me next, which will be at the end of September. In the meantime there is no question as to the great improvement in his condition following immediately on the correction of his refraction and strabismus. I am yours very sincerely, F. W. Marlow."

During a personal interview with Dr. Stewart a few weeks ago (October, 1893), he said that the boy was working steadily on his father's farm, a source of income instead of a constant care as formerly. He also said that the father was very negligent in carrying out the instructions to have his boy wear the glasses constantly and have his eyes watched regularly, apparently being too ignorant to realize the importance of the matter, the gravity of the case, or the difficulties encountered in the treatment of epilepsy even under the most favorable auspices.

As far as Dr. Stewart then knew, no epileptic seizures had occurred, but he expressed a fear that the negligence of the parents might create further seizures.

Case IV.—Mr. H., aged forty-three years, merchant. Patient began to have severe epileptic fits when seventeen years of age. Had masturbated when a boy, and had been addicted in later years to excessive venery.

Family History.—One brother is a confirmed dipsomaniac; the father died of paralysis; one sister is a victim to sick headaches; no phthisis has existed in the family, so far as could be ascertained.

History of the Case.—The epileptic seizures of this patient varied in frequency from two or three a week to one in three months. He came under my care in 1871 (when twenty-eight years old), and was treated by me for many years with enormous doses of the bromides of potassium and sodium. These salts reduced the attacks to about four a year. Stopping the bromides invariably increased the frequency of the attacks.

Eye Defects.—In January, 1886, his eyes were examined after his return from an extended residence in the South. He showed under atropine a *latent hypermetropia* of 2·50 D., and also a manifest *esophoria* of 4°. Subsequently several degrees of "latent" esophoria also became manifest. Abduction, 4°; adduction, 30°.

Treatment and Results.—Partial tenotomies were performed upon both interni, and hyperopic glasses, 2·50 D., were given him. Since the first operation (January, 1886) he has taken no bromides and has not had a convulsion. He has twice been at "death's door" with fevers, but he has shown at no time any epileptic tendencies.

I have not had an opportunity of examining the eyes of this patient for two years or more, but at the last test he showed an abduction of 8°, with $\frac{20}{20}$ vision in each eye, and an adduction of 45°. He was wearing his glasses constantly when I last met him (about two weeks since), and had been perfectly well for some seven years. He said that "he considered his epilepsy a thing of the past."

Case V.—Mr. H., aged twenty-four years, single, manufacturer. Referred to me by Dr. E. L. Mellus, of Worcester, Mass., March 18, 1890.

Family History.—Father has a nervous temperament; mother has gout severely and defective eyes; paternal grandfather died of bowel trouble; paternal grandmother died suddenly from some unknown cause; all paternal uncles and aunts, seven in number, lived to be from seventy-five to ninety years of age; maternal grandmother died of phthisis and insanity (after childbirth), and was nineteen years in an asylum; one of her sisters died of phthisis; one maternal aunt died of phthisis at sixteen years of age; maternal grandfather had gout terribly, drank heavily, and died of paralysis.

Eye Defects.—This patient showed an enormous amount of unilateral astigmatism in addition to marked heterophoria. Right eye + 0·50 c., axis 90°. Left eye + 4·00 c., axis 180° ◯ − 1·00 c., axis 90°. Esophoria, 11°; adduction, 35°; abduction, 3°; right sursumduction, 4°; left sursumduction, 4°.

History of the Case.—Patient was perfectly healthy until he went to Exeter to fit for college. While in Exeter he had several epileptic seizures.

He had no special aura, but usually bit his tongue.

Had masturbated before his attacks, but has not since.

He then entered Harvard and stayed a year. He had, he thinks, four attacks during that year, during which he took no medicine.

He left Harvard in June, 1885, and in September, 1885, he went into the draughting rooms of his father's factory. For eighteen months he took no medicine, and in that time had several attacks.

While in Cuba in 1887 he had a very severe attack and began taking bromides. Within two months, while in Mexico, he had two serious attacks, cutting his chin badly in one and knocking out a front tooth in another.

He then came to New York and consulted an eminent neurologist, who increased his bromides and put him on restricted diet. He had only one severe attack and one of *petit mal* during the next year, but his mental condition became seriously impaired.

When he came to me his whole appearance and manner showed markedly the poisonous effects of the bromides. His face was covered with acne. His mental condition was so bad that an interested conversation was almost impossible. In fact, it had become so alarming that his father, with tears in his eyes, said "that although he was his only son, he would rather see him dead than in his present position."

Treatment and Results.—All bromides were at once stopped. A full correction of his astigmatism was given for constant wear, and graduated tenotomies were performed on both internal recti for the relief of his esophoria.

During the first six months of treatment, while his glasses were being changed and operations performed, he had five attacks—four very light ones and one medium attack. All of these occurred after excessive indulgence in rich and indigestible food late at night, and one after indulging in too much alcohol.

During the next twenty months he had no attack of any kind. He had been actively engaged in business and has gained twenty pounds in weight. He had regained perfectly his mental condition; traveled without an attendant, maintained a yacht, and was considered perfectly well by his parents and physician.

Since June, 1892, patient has had no attack—*a period of three years with only one slight seizure.*

He has lately married, and has gained over twenty pounds in weight since he has abandoned bromides. His last tests showed the following conditions: Is wearing full correction for refractive errors, O. D., V. = $\frac{20}{20}$; O. S., V. = $\frac{20}{30}$; adduction, 38°; abduction, 6°; sursumduction—right, 4° +, left, 4° +; exophoria, 0·75°; left hyperphoria, 0·75° —.

Case VI.—Mr. S., aged nineteen years. First seen by me on November 27, 1888.

Family History.—Mother has frequent and severe sick headaches, and her sister is a martyr to them also. The brother and sister of the patient have headaches. The paternal heredity could not be accurately given by the mother, who brought the boy to me for treatment. No phthisical tendencies had ever manifested themselves in any of the patient's ancestry, as far as known. Every known relative on the maternal side suffers from headache. The mother had very marked esophoria. She was treated by graduated tenotomies in my office with very great benefit. The cure of her headaches resulted. They had made her life a burden for years.

History of the Case.—The patient is a tall, finely developed young man of five feet ten inches, weighing about a hundred and fifty pounds, and with a good color. His mother gave the following facts:

Up to the fourteenth year of age the patient was in perfect health. He then had his first epileptic seizure, following upon an attack of so called "congestion of his brain," for which no cause could be found except a fall while skating. He was then at school in Paris.

Within the next year, in spite of bromides, he had three "fainting attacks," lasting an hour each.

He was then removed to a school in England, and had a number of severe epileptic seizures in spite of large doses of bromides.

In August, 1887, he was sent to America and placed in a select school, where he could be carefully watched over and his habits of life regulated. He had taken every day for the previous year not less than sixty grains of potassium bromide and fifteen grains of sodium bromide, and at times much larger doses.

During the year prior to his visit to my office the seizures had become more frequent and extremely violent—so violent that three men could not restrain the patient, *and a room had been padded with mattresses and especially kept for the protec-*

tion of the patient when thus seized. Into this room he would be placed and allowed to thrash about, until attack after attack would prostrate the patient. All medical treatment seemed of no avail, and the father was asked to remove the boy from the school.

Medical advice was then taken, and it was deemed advisable to commit the patient to an insane asylum as an incurable and uncontrollable case of dangerous epileptic seizures. At the earnest solicitation of friends, the parents were urged to make a trial of the "eye treatment" in the hope that it might possibly avert so horrible a fate for the boy, even if it did not markedly affect the frequency of the fits.

As the absolute cessation of the use of bromides was insisted upon by myself, from the date of the first visit, the boy was with some reluctance admitted at my solicitation to a private hospital, so that he could come to my office with an attendant and be protected from injury if the fits became very frequent or severe.

A record kept by the principal of the school showed that during thirty-four days fits had occurred in the twelve months that preceded my care of the boy, in spite of extreme doses of bromide salts and chloral at intervals in addition to his regular daily doses.

Eye Defects.—On the 17th of November, 1888, the patient showed normal vision in both eyes; adduction, 54°; abduction, 5°—; right sursumduction, 2°—; left sursumduction, 2°—; esophoria, 2°; left hyperphoria, 1°.

In accommodation, patient showed esophoria 10°.

November 18th.—Under atropine, patient showed a latent hypermetropia of a scant one half dioptre. Esophoria, 2°; left hyperphoria, 0·5°.

Treatment and Results.—The patient carried his head, as his mother said he always had done, very markedly to the left side (justifying a suspicion that right hyperphoria actually existed), and his esophoria was very palpable to a careful observer. Later on, my suspicion of an existing right hyperphoria became confirmed by most positive tests.

Here, then, was a boy who showed at the onset almost perfectly constructed eyes, with only a slight tendency inward (apparently), and a suspicion of hyperphoria, yet he was having terrific epileptic seizures that were uncontrollable by drugs. His power of abduction was low, however, and prisms of 1°, base out, were placed for twenty-four hours over each eye.

At the third visit, on the following day, he showed esophoria of 7°; adduction, 71°; abduction, 3°; and the prisms were increased to 4°.

In three days more he showed esophoria of 10°, with unconquerable double images. Adduction 68°, and abduction 2°. The tendon of the right internal rectus muscle was freely relaxed by a graduated tenotomy. This improved his deviating tendency inward; but some esophoria still disclosed itself. Result: Esophoria, 2°; abduction, 7°; left hyperphoria, 0·25°.

Subsequently a 2° esophoria prism was given the patient for constant wear. He disclosed at once 6° of esophoria, and his abduction fell to 4°; adduction, 73°.

On December 24th the opposite internal rectus was likewise operated upon, and his esophoria was apparently totally corrected for some time after the operation, his adduction being normal (8°).

On December 27, 1888 (ten days after the cessation of bromides), the patient had a fainting attack in my office without tremor, but with a total loss of consciousness for some ten minutes. The habit of carrying the head toward the left shoulder had been persistent up to this time. An examination of the eyes disclosed a *right hyperphoria* (as was originally suspected) of quite a high degree.

From this date until February 12, 1889, patient was treated for hyperphoria by prismatic glasses, and *no return of epileptic seizures had occurred.* At this date the patient showed esophoria, 0°; right hyperphoria, 2°; adduction, 73°; abduction, 6°; right sursumduction, 4°+; left sursumduction, 0°. I then determined upon a third operation, and let out the right superior rectus as far as I deemed it wise to do so, although I apparently failed to correct his right hyperphoria by so doing. Results of operation: Esophoria, 0°; left hyperphoria, 0·5; right sursumduction, 3°—; left sursumduction, 2°+. Prismatic glasses, for a remaining tendency toward a right hyperphoria that soon disclosed itself, were again resorted to, as a step toward correction of the existing "eye-strain."

The boy then returned to his former school.

On July 1st, when the *boy had passed over seven months* without an epileptic seizure, I received a letter from his mother, from which I quote as follows:

"I want to tell you how very grateful I feel for the great good you have done my boy. It is really wonderful how he has improved in health since he has been under your care. He writes me that he has not had a single attack since I left New York. This seems almost a miracle when one remembers how the boy suffered before coming to you."

On July 7, 1889, *over nine months* had passed since an actual convulsion had occurred, and nearly eight months since the "fainting attack" in my office. He had been some time without prisms or any eye treatment, when he imprudently used a lawn mower violently on a very warm day for several hours. As a consequence, he was seized with one of his "old-time attacks," having three severe convulsions and two light ones in the next forty-eight hours. They were accompanied by marked gastric disturbance and fever.

July 10, 1889, on visiting me, I found over 2° of right hyperphoria for which I again operated upon the right superior rectus tendon. Tests after this operation showed no hyperphoria; esophoria, 1°; abduction, 6°; sursumduction—right, 3°; left, 3°—.

On October 14, 1889, the patient engaged in a cross-country run of several miles, after school exercises, and became greatly overheated. He was again seized with a severe convulsion, and had two light ones later in the day. He had again marked gastric disturbance. Fourteen weeks had elapsed since the previous attack. An esophoria prism of 2° was given him.

On December 26, 1889, the patient was again seen. He had experienced no return of attacks, was in excellent health, and had taken no medicine for thirteen months. He still shows 1° of right hyperphoria, esophoria of 2°, adduction 58°, abduction 7°—, right sursumduction 4°, left sursumduction 1°+. He is wearing prismatic glasses for 2° of esophoria.

As operative work upon the eye muscles had been done somewhat rapidly upon this patient, he was allowed to wear his esophoria prism, with instructions to visit the office at intervals of a few days for the object of exercising the eye muscles by means of prisms and improving their tone.

Little change occurred. The old tendency toward right hyperphoria has never been disclosed, and gradually the right and left sursumduction have become equal. Some latent esophoria disclosed itself, however, and the abduction showed a marked decrease.

On October 29, 1890, the patient showed the following tests: Esophoria, 3°; left hyperphoria, 0·25°; adduction, 58°; abduction, 3°; sursumduction—right, 3°+; left, 3°—. He had been wearing a 2° esophoria prism.

A graduated tenotomy was performed on the right internal rectus. Result of operation: Esophoria, 0°; hyperphoria, 0°; abduction, 8°.

On April 2, 1892, this patient had *passed over ten months without* an epileptic seizure, *and only one attack had occurred in nearly two years.* He is wearing now a 2° esophoria prism.

September 6, 1893.—Patient reported at the office after an absence of several months. He reported that he had discarded the 2° esophoria prisms that had been ordered for constant wear, and had been without them for several days, during which time he had been occupied in a hothouse. He was seized with a convulsion that lasted some minutes.

Two years and three months had elapsed since his last epileptic seizure.

The tests of his eyes showed: Adduction, 45°; abduction, 5°+; sursumduction—right, 2°; left, 2°; esophoria, 2°; no hyperphoria; 2° esophoria prism was ordered.

November 12, 1893.—Since the last note the patient has had no epileptic seizure. His esophoria prism has been increased to 4°, as he has disclosed some latent esophoria. His last tests showed: Adduction, 69°; abduction, 3°; sursumduction—right, 2°; left, 2°; esophoria, 5°; no hyperphoria.

(*To be concluded.*)

COMPLETE DESTRUCTION OF THE CONTENTS OF THE NASAL CAVITIES AS A RESULT OF SYPHILIS.

By JOHN DUNN, M.D.,
RICHMOND, VA.

Mary S., aged twenty-three years. History as follows: Patient is about four feet ten inches tall; mulatto; sickly as a child. At an early age had some skin eruption, whose nature she does not know; at the age of five or six had a deep sore on the back of her leg, difficult to heal; at fifteen had some "private trouble"; at sixteen had "scrofulous glands in the neck" and "sore eyes"; was "blind for a while"; at eighteen had a "sore throat," which left her with "that hole in the palate"; at twenty her nose began to annoy her and her eyelids to swell; at twenty-one "the last piece of bone came out of the nose," and she began to get well; is the mother of two children. Such is the history of the case, the condition of whose nasal cavity is here to be briefly described.

The dorsum of the nose is flat, giving the patient the appearance of having epicanthus; the alæ are both drawn in toward the nasal cavity, the right ala being the more depressed of the two. The interior of the nose has been deserted by its every inhabitant. There is to be seen no trace of sæptum, bony or cartilaginous, from the cribriform plate to the floor of the nose. Even the intermaxillary crests appear to have been destroyed. The floor of the nose is level, except in the middle line posteriorly, where appears a small teat about two millimetres in diameter. There is no trace on either side of inferior turbinate, which, with lacrymal, ethmoidal, and maxillary processes, have been entirely destroyed. There is no sign of an ethmoid bone, of middle or superior turbinate, of ethmoidal cells, anterior or posterior, of unciform process. The maxillary sinus on either side is a continuation of the nasal cavity. All is one huge chamber, whose two sides are symmetrical and whose boundary lines have been destroyed. The nasal cavity passes into Highmore's antrum on one level, whatever of bony partition once existed having been destroyed. High up on either side of this now nasal cavity, somewhat back, can be seen two round holes, about two millimetres in diameter, the inferior terminations of the once ethmo frontal canals. (These are stopped up with thick mucus.) Centrally, behind, in the extreme upper part of the nasal cavity there is an elliptical opening, of which the long diameter is about four or five millimetres. The mucous membrane overlaps this pit, which, I suppose, represents the opening into the sphenoidal sinuses, into which, however, I was unable to probe. Posteriorly below, in the region of the soft palate and Eustachian tube, the tissues are all drawn together, so that when the patient swallows, this region resembles somewhat the puckered opening of the ordinary rubber tobacco bag. The Eustachian-tube mouths have been much injured by ulceration, are grown to the soft palate, and their openings are represented by narrow slits which can be seen by anterior rhinoscopy. The patient's hearing is excellent. The sense of smell is, of course, destroyed. The mucous membrane of the nose is fairly normal in appearance, is smooth save for the above-mentioned openings, and the secretions, while more than normal, are not excessive, nor does there seem to be an undue tendency to the formation of scabs. When the patient opens her mouth a triangular hole can be seen in the soft palate just above the uvula, which is elongated. The patient has never had, to her knowledge, since infancy any skin eruption. Treatment I have been unable to find out. It is fair to infer, however, that it must have been almost altogether neglected.

Many interesting questions are suggested by the above-described case, but, as only the result of the inflammation was seen, the case is reported as a result, without comments.

A BRIEF SYNOPSIS OF THE THERAPEUTICS OF STATIC ELECTRICITY.

By S. H. MONELL, M.D.

With a view to present the recognized indications for static electricity in a form appropriate for ready reference, the following paper is submitted by the author. To those already familiar with the well-known properties of the galvanic and faradaic currents, the tabulated statement herein offered will furnish a convenient means of comparison. No attempt will be made to specify the various methods of administration, it being assumed that the reader is acquainted with the technique of operating the static machine. The writer's system of interrupting the static current has been described in other articles and to them the reader is referred. The sphere of therapeutic action of static electricity is sufficiently wide to be justly considered remarkable without proclaiming it a cure-all. In many acute inflammatory states there are other agents which will generally be called into use, yet even here there is some work which "static" can well do. Its chief field, however, is found in conditions, either acute or chronic, which have to do with nerve action, muscles and joints, pain, functional processes, and nutrition.

(*a*) It affords the most certain and permanent relief for lumbago, sciatica, rheumatic and muscular pains.

(*b*) Neuralgias of every kind seem to yield to it more speedily and permanently than to any other form of treatment. In the various types of head pains and in insomnia it is peculiarly efficacious.

(*c*) No other agent equals static electricity in combating hysterical states and associated conditions. It furnishes our best method of treating functional nervous diseases.

(*d*) It is an efficient regulator of deranged bodily functions and is not surpassed by any other agent in the successful treatment of that important class of ailments known as functional diseases.

(*e*) As a general tonic and as a stimulant to depressed nervous functions it is of the utmost service, especially in neurasthenia and in old cachexias. As a means of improving the general nervous tone of patients it is without a rival.

(*f*) Reflex irritation, peripheral neuroses, etc., yield in most cases to proper applications of this agent. Pruritus of various forms, the itching of eczema, etc., are cases in point.

(*g*) In all dietetic diseases it acts with decided benefit; it produces remarkable improvement in disturbed visceral functions, nausea, vertigo, dyspepsia, constipation, colic, etc. In chlorosis and anæmia and all perversions of nutritive processes it lends ready aid to the restoration of the normal functions.

(*h*) Diseases of the scalp. Patients undergoing several months of regular static treatment usually find that their hair ceases to fall out in combing and that the nutrition of the scalp improves.

(*i*) Exudations, infiltrations, localized œdemas, etc., are quickly resolved and absorbed under skillful static administration.

(*j*) It usually surpasses all other forms of electricity in dealing with stiffened, contracted, or paralytic muscles, acute or chronic muscular deformities, and muscular spasm. The ease with which it will often conquer an obstinate case is one of the most surprising things in electro-therapeutics. Acute examples of these types not infrequently succumb to one or two séances of static.

(*k*) Its tonic action makes it a valuable agent in diseases of the heart, both functional and organic. Where coldness of the extremities or general want of vital warmth exists it possesses a singular power to promote the creation and distribution of animal heat.

(*l*) In locomotor ataxia it will do more to relieve pain and maintain a degree of comfort than any other agent. Used in conjunction with galvanism, it may arrest the progress of early cases indefinitely.

(*m*) It has given the most brilliant results in the treatment of hemiplegic, traumatic, and all forms of motor paralysis, and frequently restores complete muscular power after all other measures fail. Paralysis of the sphincters, of the vocal apparatus, or of any part of the body may be treated with better success by static than by other measures.

(*n*) It admittedly holds the highest place in the treatment of chorea.

(*o*) In epilepsy it produces excellent results in improving the general condition and in moderating the frequency and the severity of the attacks.

(*p*) In mental disturbances it should be faithfully tried whenever possible.

(*q*) Disorders of sensation are more rapidly improved by static electricity than by either galvanic or faradaic applications.

(*r*) In exophthalmic goître it affords relief to some of the most distressing symptoms.

(*s*) In gout and rheumatism its efficiency has been reputed great since the earliest history of frictional machines; even in rheumatoid arthritis it has won praises.

(*t*) It is a powerful, painless, and effective tonic to the weakened muscles in lateral curvature of the spine; as a "massage" it is unequaled.

(*u*) In the treatment of chronic inflammatory and spasmodic diseases—such as influenza, phthisis, bronchitis, unresolved pneumonia, asthma, laryngitis, neuritis, synovitis, etc.—it gives excellent and often brilliant results.

(*v*) In dermatoses, especially those dependent for their origin upon neurotic or nutritional disturbances, it is either an all-sufficient remedy or a valuable adjunct to medicinal measures.

(*w*) In gynæcology the static machine furnishes most valuable auxiliary aid to galvanism, and single-handed will conquer a large percentage of woman's troubles.

(*x*) In convalescence from acute disease, debilitating fevers, and in all the tedious, irksome conditions of a slow recovery from an exhausting illness, the tonic and vitalizing action of static electricity excels any other agent in the author's experience.

(*y*) It is an invaluable tonic for the general infirmities of old age. Its constitutional effects increase the sum of vitality and it will do much to relieve the distressing symptoms which render declining years a burden and a care.

(*z*) No other electrical application may be made so gratifying to the patient; no other method of treatment elicits such frequent expressions of satisfaction; no remedy may be more swift and permanent in action; none may be more easily applied in many cases.

This list does not exhaust its powers of usefulness, but will point the way to its application in various obscure conditions where diagnosis is difficult and where past treatment has yielded poor results. In these anomalous cases great aid may not infrequently be obtained from skillfully directed static electricity. Nearly every possible application of faradism can be duplicated with "static," and the full limit of its many-sided capabilities probably lies far beyond our present knowledge and experience. That it can promptly remove all pain and soreness from a superficial burn I recently demonstrated to the satisfaction of a careless assistant who had come in too close contact with a gas heater in my office. Its control over nerve and muscle functions borders upon the phenomenal. Considered from every standpoint, a successfully operated and powerful static machine is, without doubt, the most surprising single therapeutic weapon in the whole arsenal of scientific medicine. Even with its infirmities it is marvelous, and if ever perfected it will be invincible in popular favor.

Note.—Since I wrote this article an improved static machine has been placed before the profession by the Galvano-Faradic Manufacturing Company which appears destined to greatly extend the therapeutic value of this form of electrical administration.—Author.

665 Lexington Avenue.

THE
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"KOSHER" MEAT AND EFFICIENT MEAT INSPECTION.

The *British Medical Journal* for December 23d has a leading article on the advantages and disadvantages of "kosher" meat, in connection with a lesson concerning food production taught by a recent ordinance adopted by the town of Carlisle. The corporate authorities of that city have been enabled to suppress places of private slaughtering, small and irresponsible concerns chiefly. All the animals are there slain in central abattoirs under the inspection of city officials whose duty it is to prevent cruelty and to detect diseased conditions of the animals and meat. London now has five hundred and thirty-seven private slaughterhouses, but the number is rapidly diminishing. These houses are only partially supervised, for there is no systematic inspection of the slain animal except in the Jewish places. In Gentile places there is no legally prescribed method of slaughter; the animal may be pithed, stuck, shot, or beheaded. The "schochet," as the Jewish slaughterer is called, in obedience to the ritual of the Hebrews, kills the animal by the process of bleeding, and the creature must of necessity endure a comparatively long period of intense suffering—passing through terror, pain, faintness, and epileptic convulsions. The Jewish slayer has this superiority over the Gentile, that he can not enter upon his vocation unless he has successfully passed his examinations before a board of Jewish experts in all matters relating to "schecheta," or slaying. He must know the signs of disease in the animal and of unwholesomeness in the flesh. Meat that is without blemish is marked with a seal telling in Hebrew characters the name of the sealer and the date of slaughter. Such sound meat may become the food of the orthodox Jews, and is known as "kosher," while meat that is not "kosher" is sent to the markets of the Gentiles. From reports made by the Jewish slaughterers at Deptford and other places in East London it appears that only seventy-three per cent. of ox and sheep meat that was inspected at those places yielded "kosher"; the remaining twenty seven per cent. presumably went into the markets where the East End artisans purchase their food. The writer estimates that not less than ten per cent. of the meat annually sold—about two hundred and twelve thousand tons, according to the totals reported for the year 1892 by the Board of Agriculture—was positively unsound or unwholesome.

The remedy, needed by London and many other large cities, according to the writer, is to concentrate the slaughtering places into public abattoirs, in which it will be possible to carry out a system of continuous inspections by skilled men. With the slaughterhouses widely scattered, a satisfactory inspection could only be effected by a vast army of inspectors, maintained at an enormous expense. And even then there would be room for doubt as to the possibility of an evasion of the authority of the officials, whenever the latter are absent. At present the presumption is that "only a small portion of unfit meat is detected and destroyed, and a still smaller fraction of needless cruelty is prevented."

In the January issue of *Public Health*, J. Lawrence Hamilton, M. R. C. S., reprobates the Jewish method of slaughtering. He is himself a Jew—presumably of the non-orthodox branch—and has had opportunities to inspect the work done in the Jewish slaughterhouses personally. He condemns the Jewish method of killing cattle as "consummately cruel and clumsy"; the meat is prone to decomposition and does not keep fresh so long as so-called "Christian" meat. He quotes Sir Benjamin W. Richardson as saying that less blood is retained in the flesh of an ox killed properly by the pole-axe than in that of an animal put to death according to the Jewish ritual.

Of the Jewish system of meat inspection Mr. Hamilton states bluntly that it is a farce, for the reason that the inspectors are ignorant of veterinary science and the use of the microscope. He further shows that in several European countries, as in Saxony, in Switzerland, and in the city of Berlin, there have been public agitations against the "cutthroat method" of killing cattle as being needlessly cruel and revolting. He has, watch in hand, timed the duration of the dying process after Jewish slaughter, and he has known seven minutes to be occupied. Dr. Richardson has alleged that as much as twenty minutes may elapse in that process.

MINOR PARAGRAPHS.

ANTIDIPHTHERIN.

A therapeutic note in the *British Medical Journal* for December 30, 1893, cites the experience of Kunne, of Vienna, in the use of Klebs's antidiphtherin. Four cases of diphtheria were treated; of these, two were in children admitted into a hospital with moderately high fever and slight membranous exudation on the tonsils. Applications of a five-per-cent. solution of the new drug were at once made, and repeated three or four times in twenty-four hours. On the following day the fever had subsided and the membrane had disappeared. In a third case the disease was very severe, and there was an extensive growth of the membrane. Tracheotomy was necessary. The applications of antidiphtherin in this instance—a one-per-cent. solution—could only be made through the tracheotomy tube. They appeared to be without effect; the child died by an extension of the disease into the bronchial tubes. In the fourth case the treatment seemed to have a favorable effect at first; the fever was reduced and the membranes became disintegrated, but their formation anew was not prevented. In this case the remedy probably had no particular effect.

A JUDICIAL DOGBERRY.

Under this title there appeared an article in the *Journal of the American Medical Association* for December 23, 1893, containing a report of the case of a Dr. Gibbs, of Omaha, who was fined by a judge for being absent from the court room when he had been subpœnaed as a witness. The doctor pleaded in extenuation that he had been called to attend a patient who was very ill, and had not been able to reach the court room at the time. The judge asserted that the doctor should have notified the court, as the case was on trial, and, refusing to accept his excuse, fined him ten dollars. It is well for physicians to know exactly what position they hold, if the dignity of the law is to be upheld at any cost, without regard to the conditions of patients. A case in point was one of obstetrics which was unexpected, and the call for the doctor came a few minutes before he was to leave for the court. As it was in the country, it was impossible for a messenger to be found and sent, so the doctor was obliged to commend the care of the patient to some neighborly women until an excuse was obtained from the court. On his return he found that the case had passed into other hands, and, besides losing his patient, he was severely censured by persons who did not understand the situation. Innumerable emergencies might arise where a conscientious physician would see that his paramount duty was to his patient, and yet it might be impossible to notify the court at the time.

LA GRIPPE.

A physician who has just passed through an attack of this distressing disease thus writes to a friend: "Did you ever have this infernal disease that they call the grippe? If not, don't. I have been through it for the last six weeks and am ready to give my friends the benefit of my experience. It is certainly the most diabolical malady that ever got out of Pandora's box. If the old girl has anything worse in reserve I trust she will keep the lid of her Saratoga safely locked and then kindly sit on it. Sneeze, freeze to death, burn up, have your energy sapped, let all the clouds of heaven lower over your head, get on familiar terms with all the blue devils that ever escaped by volcanic exit from equatorial eternity—do all of this and keep it up for six weeks, and then you can intelligently listen to a lecture on *la grippe*. Cerebration becomes altogether of the too conscious sort for literary work."

PELLAGRA.

The *Prager medicinische Wochenschrift* contains an article on this disease by Dr. Tuczek. It was through a study of the possible relation between ergotism and dementia paralytica among the Italians that the author was brought to notice the apparent association of pellagra. Histological examinations of the nervous system, in cases where death had ensued, with pellagra present, showed marked degenerative changes in the spinal cord, especially in the posterior and lateral columns. The author believes that his studies are sufficiently confirmative to warrant the statement that the poison from the diseased grain acts in such a manner upon the nervous system as to produce degenerative changes in the spinal cord, and that an important addition is thereby made to our knowledge of the ætiology of nervous diseases.

THE NEW YORK CITY HEALTH DEPARTMENT.

Having recently had occasion to visit several of the offices of the department, we have a very profound impression that the medical officers and laboratory workers have been wofully handicapped in recent years by their limited accommodations and wide separation from each other. We judge that the department had outgrown its rooms and conveniences fully five years ago; there are several offices of the first importance that derive their light and air from contracted air-shafts. But a better condition of affairs is very soon to be brought about, for even now the employees of the department are busily engaged in preparing for removal to better quarters in the new municipal building on Centre Street.

THE PARIS CHOLERA CONFERENCE.

The President has appointed Dr. Stephen Smith, of New York, Dr. Edward O. Shakespeare, of Philadelphia, and Dr. Preston H. Bailhache, of the Marine-Hospital Service, as delegates to the approaching Paris conference regarding the international relations of Asiatic cholera. This movement is under the auspices of the French Government, and is spoken of as the International Sanitary Commission of 1894. Each of the great powers of the civilized world has received an invitation to be represented by three delegates. The first session will be held on January 24th.

A PROPOSED MEDICAL CONGRESS IN ASIA.

The *Indian Medical Gazette* suggests that the time has come for a medical meeting for India and the tropical sections of southern Asia. The *Gazette* states that the conditions which surround professional work in the tropics have received slight attention in the deliberations of the medical congresses held in colder climates. Tropical diseases and tropical sanitation, it says, are subjects that would especially be proper for discussion in a convention at Calcutta or Madras.

DISINFECTION ON LONG ISLAND.

The *Independent* reprints *literatim et punctuatim* the following paragraph from a board-of-health report of a town on Long Island: "Every person who is confined in a house owing to sickness and contagious diseases, should at all times be thoroughly covered with disinfectants both externally and internally, to insure safety to themselves and others as in my mind a spread of the same is caused by carelessness on the part of people who know it all and can not be told by persons of experience."

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 16, 1894:

DISEASES.	Week ending Jan. 9.		Week ending Jan. 16.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	0	0
Typhoid fever	10	5	6	1
Scarlet fever	96	11	113	13
Cerebro-spinal meningitis	1	2	0	0
Measles	491	29	473	24
Diphtheria	229	55	187	52
Small-pox	12	2	8	2

The New York Ophthalmological Society.—At the annual meeting, held on Monday, January 8th, the following officers were elected: President, Dr. W. S. Dennett; vice-president, Dr. Frank N. Lewis; secretary and treasurer, Dr. D. W. Hunter; committee on admissions, Dr. Henry D. Noyes, Dr. Arthur Mathewson, and Dr. J. B. Emerson.

The Medical Society of the Northern Dispensary.—The special order for the last meeting, on Wednesday evening, the 17th inst., was a paper on Aphthæ and Diphtheria; their Association and Differentiation, by Dr. Adolph Rupp.

The Kings County Medical Association.—At the recent annual meeting the following officers were elected: Dr. T. M. Rochester, president; Dr. N. W. Leighton, vice-president; Dr. Raynor and Dr. Riggs, secretaries; Dr. E. H. Squibb, treasurer; and Dr. R. M. Wyckoff, member of the executive committee.

The late Dr. O. G. Harrison.—A respected member of the faculty of the New York College of Pharmacy has sent us the following:

"The New York College of Pharmacy suffers a severe loss in the person of Dr. O. G. Harrison, instructor in botany, pharmacognosy, and materia medica, who died very unexpectedly, after a short illness, on the evening of Sunday, January 14th. He was taken ill on the preceding Tuesday with severe abdominal symptoms, from which he afterward partially recovered. The nature of his disease could not be determined until Sunday morning, when the indications of intestinal rupture became unmistakable, and an operation was at once performed. A successful result was, however, quite hopeless, and the doctor died at half past nine the same evening. He was conscious almost throughout, and was perfectly calm and ready for death.

"Dr. Harrison was an able scholar, both at the College of Pharmacy, where he was graduated in 1890, and at the College of Physicians and Surgeons, where he was graduated in 1891. In order to fit himself more particularly for pursuing the study of the structure of drugs, he worked assiduously at histology during the past summer, under Professor Penhallow, at the Harvard Summer School of Science. In addition to his position at the College of Pharmacy, Dr. Harrison was the highly appreciated assistant of Dr. R. W. Wilcox at the Post-graduate Medical School, a member of the New York City Board of Pharmacy, and the editor of the *Journal of the Alumni Association, C. P. C. N. Y.*, the first number of which was just about to be published. His untimely death, just when the increasing prosperity of his college seemed about to usher him into a brilliant career in his chosen line of work, must appear exceptionally hard to his relatives and friends, particularly to his young widow, to whom he was married less than a year since. As a son and husband, Dr. Harrison appeared to have approached about as near as possible to the ideal. His character as a man was singularly modest and quiet, yet dignified and strong, and he was a Christian of the sort to make even the fixed unbeliever pause and wonder if, after all, there was not something distinctive in the Christian character."

The Death of Dr. Frank Dudley Beane, of New York, occurred in Riviera, Florida, on Saturday, the 6th inst. He had been the subject of some pulmonary disease and had been advised to go to Florida, where he was taken dangerously ill with symptoms pointing to cerebral congestion. He was born in Manchester, New Hampshire, and was forty-two years old at the time of his death. He was a graduate of Bellevue Hospital Medical College, of the class of 1872. He was connected with the New York Eye and Ear Infirmary for a number of years. Dr. Beane was highly respected by his professional brethren.

The Death of Professor Rudolph Kaltenbach is announced. He was professor of gynæcology in the University of Halle, where he succeeded Olshausen in 1887. In 1867 he became the assistant of Hegar, then at Freiburg, and the two worked together as clinicians and authors for many years. He went from Freiburg to Giessen in 1883. His *Lehrbuch der Geburtshülfe*, published in 1893, is a work very highly esteemed in Germany.

Society Meetings for the Coming Week:

MONDAY, *January 22d:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, *January 23d:* New York Dermatological Society (private); Buffalo Obstetrical Society; Medical Society of the County of Putnam (semi-annual), N. Y.

WEDNESDAY, *January 24th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Metropolitan Medical Society (private); Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

THURSDAY, *January 25th:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private).

FRIDAY, *January 26th:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, *January 27th:* New York Medical and Surgical Society (private).

Letters to the Editor.

POISONING WITH BISMUTH.

ELIZABETH, N. J., *January 5, 1894.*

To the Editor of the New York Medical Journal:

SIR: In reading the extract from the *Lancet* in your issue of December 30, 1893, on Bismuth as a Local Application in Burns, my mind went back to a case of bismuth poisoning which came under the notice of our hospital staff during the month of June, 1892. Thinking it may be of value to the profession to record such a case, I take the following from the records of the Elizabeth General Hospital: A German girl, fifteen years old, single, brunette, and of a nervous temperament, received a burn of the third degree, covering an area of sixteen by fifteen inches, on her back. This occurred on April 16th. She was admitted into the hospital on June 2d. From the time of the accident until her admission she had been treated by a physician, and we know little or nothing of the treatment. Upon her arrival she was anæsthetized with ether and the burned surface scraped and cleansed with a 1-to-3,000 bichloride of-mercury solution and dressed with bismuth subnitrate (Squibb's); over this were placed muslin, cotton, and a bandage.

The patient was placed upon the use of a milk diet and the wound dressed every second day. This treatment was continued until June 10th, when the dressing was discontinued, the following signs and symptoms having been discovered: A black line along the margin of the gums, involving those of both the upper and the lower jaws; headache, nausea, vomiting, paleness of the countenance, a urinous odor of the breath, elevated temperature, increased rapidity of the pulse, and increased frequency of micturition. The urine was light in color, having a specific gravity of 1·012, and acid in reaction, and contained a small amount of albumin.

Œdema and pain of the lower extremities and some cutaneous irritation of the upper limbs, with a marked diarrhœa, existed and continued until her death, which occurred on the 18th of June.

The literature on this subject seems to be meager, but I feel convinced, as do also my coworkers, that this was a genuine case of bismuth poisoning. The bismuth was tested for lead and arsenic, and both were found to be absent.

NORTON L. WILSON, M. D.

Proceedings of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of January 2, 1894.

The President, Dr. M. ALLEN STARR, in the Chair.

Traumatic Deafness.—Dr. J. LEONARD CORNING narrated the history of the following case: The patient was a lad eighteen years old, who had received a severe kick directly over the right ear while engaged in a game of football. He was first seen by Dr. David Webster, who, upon careful examination, found that there was total deafness on the right side; aerial and bone conduction were suspended. There was no trouble of the middle ear, and the drum was in perfect condition. There was slight bleeding from the external ear. There was no evidence of fracture. The case was then referred to the speaker, who applied to the ear a rapidly interrupted faradaic current, which was allowed to pass through the ear for about ten minutes, when the hearing was so far restored that the patient could hear the watch at a distance of six inches. Before making the application, the external meatus was plugged with absorbent cotton moistened in salt solution. A severe tinnitus, which existed with the deafness, was also relieved. The speaker said he had no idea of what the lesion had been or why improvement had followed the use of the current; it had been employed simply as a tentative measure. The young man's hearing was now entirely restored. There was no suspicion of hysteria. The visual field had not been tested.

Dr. DAVID WEBSTER said he supposed the deafness had been due to concussion either of the auditory nerve or of the labyrinth, of which he had seen cases reported. Temporary blindness had been produced by a sudden blow on the brow, without ophthalmoscopic or other lesion. Most of those cases, however, were due to fracture of the base of the skull involving the optic foramen and producing nerve atrophy. He had never seen another case similar to the one reported by Dr. Corning.

The PRESIDENT suggested that the case might have been one of traumatic hysteria or concussion of the auditory nerve. In consultation with Dr. Jacoby he had recently seen a case of total deafness in both ears of central origin in which a temporary improvement in the hearing had been produced by the use of a strong galvanic current, about six milliampères, which was a strong current for the acoustic nerve.

Dr. J. ARTHUR BOOTH said that in a number of cases of tinnitus he had employed the galvanic current with marked benefit. He had never seen a case similar to the one reported by Dr. Corning.

Acromegaly.—Dr. RALPH L. PARSONS reported the case of a man aged thirty-six years, whose family history was negative, and who had never had venereal disease or used alcoholic stimulants. He had been in good health until eighteen years ago, when he had had an attack of malarial fever. From this he had recovered and had had no recurrence since. Ten years ago he had been told that he stooped and carried his head to one side. Eight years ago he had begun to suffer from a pain in the back of his head. This came on mostly at night, and not oftener than once a week. Subsequently the headaches occurred more by day than by night. Latterly they had increased in frequency and duration, and had often been excruciating in character. The pain was usually most severe at the occiput, but would also involve the left parietal and frontal regions; the right side of the head was unaffected. About six years ago his attention had been first called to the large size of his hands. He then for the first time perceived that they were of extraordinary size. He did not know for how long a time this increase in size had been taking place. He could not say whether they had increased in size during the past preceding six years.

A careful examination of the patient had been made in October last, with the following result: Weight, two hundred and twenty-seven pounds. No pronounced symptoms of organic disease. Hair rather coarse, but natural in condition. Left ear slightly thickened. Forehead retreating; superciliary ridges quite prominent; no exophthalmia; malar bones rather prominent; cheeks rather sunken; nose broad and full at the nostrils; lips normal; tongue decidedly enlarged, obstructing free articulation; alveolar processes normal; teeth not separated; chin elongated; head inclined strongly and habitually to the left side and forward; hands large and spadelike, the right hand being decidedly the larger. The soft tissues of the hands and fingers were firm and resilient, as though infiltrated by an elastic substance; they did not pit on pressure. Wrists rather large; arms normal; thorax and pelvis normal. The feet were large, but perhaps not larger than in the case of many men of his weight. The patient had perspired very freely for the past ten years; of late the perspiration had been decidedly offensive. Besides the headaches already referred to, the patient also complained of pain in the left ear and eye, the latter coming on after reading or using the eye in a strong light. He did not think his eyesight had become impaired. The appetite and thirst were excessive, and there were no marked mental symptoms.

On the 21st of October last, by advice of Dr. Starr, the patient began the use of thyreoid extract, five drops three times daily. The dose was gradually increased until he had received fifteen drops three times daily. With the exception of tonic baths, general hygienic measures, and a regulation of the diet, no other treatment was given. At the present time the patient reported that he was feeling decidedly better; he was more cheerful and his headaches had been relieved to a very great extent. They had not, however, entirely disappeared. There seemed to be no change in the dimensions of the hands. His weight had increased rather than diminished. There had been a great improvement in the subjective symptoms, but there was still a reasonable doubt whether this improvement was due to the direct action of the medicine, or to the patient's mental status induced by the fact that something was being done for his relief.

Dr. CORNING was inclined to think that the improvement in the condition of the patient had been due to the medication employed, rather than to the mere fact that something was being done for him. Such patients, he thought, were usually not of a very imaginative turn of mind.

Dr. WEBSTER inquired whether any change in the thyreoid gland had been noticed in the case, also whether there was any relationship between acromegaly and myxœdema.

The PRESIDENT said he had been somewhat responsible for the use of the thyreoid extract in the case narrated by Dr. Parsons. There had been nothing original in the suggestion, as this method of treatment had been pursued in England, in a number of cases of acromegaly. It was purely empirical. The supposed lesion of acromegaly was an increase in the size of the pituitary body. It was questionable whether it was in any way related to the thyreoid gland. The eye symptoms in Dr. Parson's case had interested him, because in two other cases of acromegaly coming under his observation there had been a concentric diminution of the visual field, and in one hemianopsia; the latter symptom was quite common, and was probably due to pressure on the chiasm by the enlarged pituitary body. In one case of acromegaly seen at St. Luke's Hospital last spring the patient had died of pneumonia, and at the autopsy the pituitary body had been found to be normal. There had been nothing to account for the peculiar growth of the bones.

Dr. Parsons, in reply to Dr. Webster, said it was generally supposed that there was a sort of relationship between acromegaly and myxœdema; whether this belief was well founded, or what that relationship was, he did not know. While his patient was not of an imaginative turn of mind, still he was hopeful, and that element would influence his mental state and perhaps even improve his physical condition.

Some Less Cultivated Phases of Psychology: Considerations of the Genesis of the Feelings, or the Relation of Desire to the Will Function; Practical Deductions therefrom concerning the Management of Various Psychopathic Conditions.—Dr. J. Corning read an interesting paper on this subject, in which he traced the relationship of the desires to the function of the will, and showed the importance of psychical influences in the correction of certain morbid mental conditions. In neurasthenia, simple melancholia, hysteria, and other functional nervous troubles the desires were best evoked and fostered through the special senses, notably through the sight and hearing, while at the same time the receptivity of the sensorium was increased by proper stimulation. The effect thus gained was not necessarily evanescent. Due heed should also be given to the general bodily condition. Nutrition must be improved and gouty and other morbid tendencies antagonized. The question of influencing the mind to the profit of the patient was certainly an important problem in neurology, and one well worthy of discussion. In concluding his paper, Dr. Corning referred to the loss of prestige which had apparently overtaken hypnotism, and which in too many instances only served to substitute a veritable neurosis for the morbid condition which it was sought to modify.

Dr. W. H. Thomson said that his own plan in the treatment of melancholia had been not to appeal to the will of the patients at all; it was only discouraging to them to tell them to think less of their condition; their train of thoughts should be involuntarily changed by new objects brought to their senses, either through the eye or through the ear. By means of a change—using the word in its broadest sense—a change of scene, of surroundings, and of society, we should endeavor to produce an involuntary displacement of the morbid ideas.

Dr. Parsons said that while, in his opinion, the principal means we had of influencing the mental state were by a correction of the bodily conditions and habits, change of surroundings, etc., yet the suggestions made by Dr. Corning were of value in certain cases, especially when the person who gave the advice was capable of exerting a strong personal influence over the patient.

Dr. William A. Macy said the suggestions made by Dr. Corning were of value in certain cases, such as mild forms of melancholia, where the patients were still able to be controlled or influenced by the suggestions of others. After the patient had progressed beyond this stage and had delusions, comparatively little could be done for him in this way. In the early stages of functional nervous trouble, suggestions, encouragement, change of scene, etc., were everything to the patients; they were even more important than medicines.

Dr. E. D. Fisher said that Dr. Corning's suggestions probably referred to the functional rather than to the organic nervous diseases. There was no doubt that the minds of these patients could be influenced by suggesting pleasant ideas, or bringing new scenes before them. This required training and discipline. In all forms of nervous diseases the emotional state was the one first affected, and it was in this stage that the suggestions made by Dr. Corning were likely to prove of service.

Dr. Corning said that in his paper he had referred to functional cases. Most of the organic cases were not amenable to any form of treatment. His object in bringing up this subject had been to show that something could be done to modify the mental state of the patient; it could be relied upon entirely, but should be combined with proper medication, with stimulants dexterously given, with supernutrition, rest, etc., as any or all of these were indicated. In this way we might prevent a melancholiac from going from bad to worse if there was no organic trouble behind the functional disturbance.

Ergot in the Treatment of Periodical Neuralgias.—Dr. William H. Thomson read a paper on this subject, in which he gave the histories of a number of cases of severe periodical neuralgias in which the symptoms had been promptly relieved by the use of ergot in large doses. In all of these cases the disease had been of long standing, and the usual remedies had been employed without avail. Dr. Thomson said his method of administering the ergot in migraine was as follows: The fluid extract of the drug was employed, combined with an equal quantity of elixir of cinchona, to obviate its tendency to cause nausea. Two drachms of this mixture were to be taken in water as soon as the premonitory symptoms of the headache were noticed, and the patient was advised to lie down and keep very quiet. If, after an hour, the headache continued, a second similar dose was taken, and then a third in another hour if necessary. As nausea was such a general accompaniment of this affection, it was provided that if either of the doses be vomited it should then be taken in an enema of two ounces of water. This medication, the speaker said, rarely failed to arrest the attacks, even in long standing cases, and with a preventive course of intestinal antisepsis in the intervals the relief from the malady had often proved permanent. The following was the history of one of the cases reported by Dr. Thomson: The patient was a young man who suffered from headaches beginning at the occiput and extending to the temples; they generally came on about 11 A. M. daily, and gradually grew worse until they reached their acme, about four o'clock in the afternoon, after which they subsided, without, however, entirely disappearing. His physician had failed to check their increasing severity, although on one occasion he had administered thirty-grain doses of chloral with thirty grains of potassium bromide every two hours until two doses had been taken, with little more effect than a slight drowsiness being produced. The next day, the patient becoming maniacal from the pain, sixty-five grains of chloral, sixty of bromide, and thirty of antipyrine had been given within two hours. This had caused a profuse sweating and moderate sleep. The third day a consultant had been called, who recommended that quinine and Warburg's tincture (which had been tried at the beginning of the treatment) should be resumed in large doses. Accordingly, sixty grains of quinine and two ounces of Warburg's tincture had been given in twenty-four hours, with even worse afternoon paroxysms of pain than before. The next day the bromide, antipyrine, and chloral had been resumed, but no great relief had been obtained. At this time he had been seen by Dr. Thomson, who recommended drachm doses of the fluid extract of ergot every hour until three doses were taken, the first two doses being combined with ten grains of quinine, and if his stomach rejected either of the doses, the medicine was to be given *per rectum*. Soon after taking the first dose the patient experienced a good deal of relief; the second dose had been vomited, whereupon it had been given *per rectum*, and this had soon been followed by a complete subsidence of the pain, with profuse perspiration. This medication was repeated for three successive days, with final cure of the headaches. The second ten grains of quinine produced decided symptoms of cinchonism.

Dr. JOSEPH COLLINS said he had before heard Dr. Thomson recommend ergot in the treatment of periodical neuralgias, and had recently had occasion to try it in several cases. In one case the patient had been given huge doses of Warburg's tincture, quinine, and potassium bromide and iodide without any benefit. He had then been given drachm doses of ergot and a marvelous improvement had at once followed. This was three months ago, and the man had had no return of symptoms since. In another case the patient was a lady, aged forty years, who had long been under treatment for migraine, the pain being of a boring character and very difficult to relieve. In this case the value of ergot in the treatment of this affection had been discovered accidentally; it was given to check a menorrhagia, and at the same time it relieved the headaches.

Dr. C. A. HERTER said that in the treatment of these cases he laid greater stress upon the diet and nutrition than he did upon drugs. He employed very few drugs, chiefly aconitine. He was decidedly opposed to the use of the antipyretics. If ergot did relieve these severe periodical headaches, which were often very intractable, it was certainly a great boon.

Dr. CORNING said it was important to determine whether the pain was extracranial or intracranial. He referred to the value of compressed air in relieving intracranial pain. External pains, on the other hand, were aggravated by the compressed-air treatment.

Dr. THOMSON, in reply to a question, said our present knowledge was not definite enough to form any idea as to how ergot acted in these cases. He simply gave it as an empirical remedy. Furthermore, his paper had referred entirely to neuralgias that were definitely periodical. These were usually very severe and entirely different from the ordinary intermittent headaches. He referred to the fact that quinine, even in small doses, when it was combined with ergot, appeared to produce cinchonism much more quickly than when given alone. In only one of the cases reported had there been any antecedent history of malarial infection, and in that case the patient simply had resided in a malarious district. Very probably there had been a malarious element in the other cases, of which the nervous symptoms had been the only manifestations. Dr. Thomson also referred to the fact that intercostal neuralgia was often accompanied by sciatica; also the occurrence of sciatica after pleurisy. The latter combination he had noticed in about twenty cases.

The PRESIDENT referred to the indefinite character of occipital headache. In some recent articles published in *Brain* some light had been thrown on this subject, the point being to make accurate observations of the distribution of the pain, and then attempt to associate that distribution of the pain field with some organism of the body distant from the pain field, but connected with the same segment of the nervous system that was connected with the nerve in which the pain was felt. Pain in the back of the head must in the majority of cases be associated with irritation in the domain of the occipital nerves, or rather of the upper fourth and fifth cervical segments of the spinal cord, which had extensive connection with other parts of the body through the sympathetic system. Perhaps, if these observations were further extended, they would explain why in so many cases of gastric or intestinal disturbance the pain was felt not where the irritation occurred, but in the head.

Reports on the Progress of Medicine.

PHYSIOLOGICAL CHEMISTRY.

BY ERNEST ELLSWORTH SMITH, PH. D.

The Action of Iron.—In his studies on the assimilation of iron, Bunge, in 1884, concluded that the inorganic salts were not absorbed in appreciable quantities, and hence did not directly give rise to hæmoglobin formation. When in organic combination, as iron containing nucleo-albumin, etc., iron is absorbed, especially when prevented from being decomposed in alimentation. Bunge suggests that iron salts used therapeutically act in one or both of two ways:

First, by preventing the decomposition of organically combined iron present in the food. This it does by reacting with the sulphide of hydrogen resulting from intestinal putrefactive processes, which, if free to act upon the iron in organic combinations, would cause their destruction and hence prevent its absorption.

Second, that the iron salts administered act as intestinal antiseptics.

Mörner, in a series of experiments on himself, has recently (*Ztschr. f. physiol. Chem.*, xviii, p. 13) studied the influence of large therapeutic doses of iron salts on intestinal putrefaction by estimating the ethereal sulphates of the urine during periods of administration of such doses (ferric chloride) and during parallel and intervening periods without iron when the same conditions of diet, etc., were maintained. The results are entirely negative, the sulphate ratio remaining unchanged despite the large doses of iron administered. Hence it appears that Bunge's second suggestion does not explain the mode of action of iron salts.

Chemical Researches on the Mineral Matter of Bone and Teeth.—Dr. S. Gabriel (*Ztschr. f. physiol. Chem.*, xviii, p. 257) expresses the composition and properties of the ash of bone and teeth by the following general formula: $Ca_3(PO_4)_2 + Ca_5HP_3O_{13} + 2H_2O$, in which from two to three per cent. of calcium is replaced by magnesium, potassium, and sodium, and from four to six per cent. of phosphoric acid is replaced by carbonic acid, chlorine, and fluorine. The quantity of chlorine amounts to only a few hundredths of one per cent., except in the enamel of the teeth, which contains a relatively larger quantity (0·21 per cent.). Fluorine is a constituent of both bone and teeth. The quantity does not usually exceed 0·05 per cent. of the ash, rarely amounting to 0·1 per cent. In direct contrast to the other solid tissues of the body, bone and teeth contain more sodium than potassium. While the quantities of calcium and phosphoric acid vary only inconsiderably, yet the magnesium and carbonic acid vary inversely with these, so that the sums of the two bases and of the two acids are constant. The distinctive character of the ash of particular bones depends on the variation in the amount of calcium and phosphoric acid replaced, and also on the nature of the replacing radicles. The difference that exists between bone ash and tooth ash is not greater than the difference which has been observed in the ash of different bones. In enamel there is less, and in the body of the tooth relatively more, calcium replaced by magnesium than in bone ash.

As the formula indicates, the phosphate is basic in character and is probably a combination of a neutral and a basic phosphate. The relative valence of the acid and basic radicles is as 15 : 16. Water is present in two combinations—water of crystallization driven off at from 300° to 350° C., and water in chemical combination, driven off at white heat when the substance is mixed with silicic acid.

The Ash of Normal Stools.—Dr. J. Grundzach (*Zeit. f. klin. Med.*, xxiii) believes that previous analyses of the ash of normal fæces do not give the actual composition of the inorganic matter present. This is mainly due to the fact that by ignition large amounts of phosphorus and some sulphur are transformed from the organic combinations in which they exist, as in lecithin, nucleo-albumin, and other proteïds, into phosphoric and sulphuric acids. Hence the analysis of the ash obtained by ignition yields entirely misleading results regarding the amount of these two acids actually present. By direct determination of SO_3, P_2O_5, and Cl without previous ignition of the substance the following results were obtained, which are here given along with two older analyses for comparison:

ANALYSIS OF—	Author.	Fleitmann.	Porter.
Sodium chloride	Cl 0·344	0·58	4·33
Potassium chloride		0·07	....
Potassium oxide	12·000	18·49	6·10
Sodium oxide	3·821	0·75	5·07
Calcium oxide	29·250	21·36	26·46
Magnesium oxide	7·570	10·67	10·54
Iron oxide	2·445	2·09	2·50
Phosphoric acid	13·760 (P_2O_5)	30·98	36·03
Sulphuric acid	0·653 (SO_3)	1·13	3·13
Silica	4·460	7·39	30·00

According to the author's views, the alkaline bases not combined with mineral acid, 58·1 per cent. of the total bases according to Fleitmann, 32·0 per cent. according to Porter, and 77·87 per cent. from the present analysis, are combined in fæcal matter with organic acids. It is a function of the epithelia of the large intestine to secrete an alkaline fluid adapted to neutralize and thus convert into soaps the organic acids formed in the small intestine by fermentation of carbohydrates, fats, and perhaps proteids. According to Nencki, Mackfadyen, and Sieber, the contents throughout the small intestine remain acid, and it is not till they have become mixed with the alkaline juices of the large intestine that the neutral and alkaline points are reached and that it is possible for putrefaction to begin. It thus appears from the analysis presented that less of mineral acids exists among the inorganic constituents, and that a very considerable portion of the inorganic bases are in combination with organic acids.

The Chemistry of Muscle, with a Consideration of Rigor Mortis and the Effects of Certain Poisons.—A. Heffter (*Arch. f. exp. Pharmak.*, xxxi) has studied the muscle tissue of cats and frogs. A hundred grammes of fresh muscle were hashed and extracted as described with ninety-six per-cent. alcohol, and aliquot portions of the combined extracts titrated, rosolic acid and phenolphthalein being used as indicators. Calculated to a hundred grammes of tissue, the average acidity with rosolic acid was 28·5 cubic centimetres of one tenth normal sodium hydroxide, as against 60·8 cubic centimetres with phenolphthalein—a difference which was constant, and suggested the presence of a substance acting toward rosolic acid as an alkaline base. On evaporation of the alcohol, extraction with ether, and titration of this ether extract, both indicators gave the same result. The acidity of these various extracts could not be attributed to free phosphoric acid or salts, for analysis revealed only traces of phosphorus, entirely inadequate to explain these results.

The influence of *rigor mortis* was to increase the acidity of the alcoholic extract only slightly, though constantly. The fresh resting muscle always contained lactic acid—a small portion in a free condition, by far the greater part in the form of salts. *Rigor mortis* was accompanied with no increase of lactic acid, either free or combined; hence its formation takes place only in the living tissue. Poisons producing tetanus caused a diminution of the amount of lactic acid contained in muscle. By poisoning with carbonic oxide, in consequence of direct injury to the cellular elements by phosphorus poisoning, and by increasing the chemical tonus (action of curare), a diminution of the lactic acid was produced, both of the free and of the combined. The author is in doubt whether in these cases there is an increase in the amount of lactic acid passing from the muscle to the blood, or whether there is an actual diminution in the amount formed in the muscle tissue.

The Composition of the Blood in Health and Disease.—R. von Jaksch (*Zeit. f. klin. Med.*, xxiii) records the results of analyses of blood, both normal and in disease, in which are determined the proteids of the total amount of blood and of the blood-serum, the number of red and of white blood-cells, the amount of hæmoglobin present, and the water and total solid constituents of the blood. The proteids are calculated from the nitrogen as estimated by the Kjeldahl method, the error introduced by the extractives present amounting, even in extreme cases, to only one per cent., as the author shows. Six normal cases were studied, eleven with diseased conditions of the nervous system, four cases of phosphorus and one each of carbonic oxide and nitro-benzol poisoning, ten of diabetes mellitus, nineteen acute cases, mainly of pneumonia and typhus, four cases with diseased livers as the primary affection, six with diseases of the lungs and pleura, thirteen cases of kidney disease, and twenty of various anæmic conditions, making a total of one hundred and four different cases.

In general it was observed that, with a diminution of the cellular elements, particularly the red blood-cells, there was a parallel reduction of proteids contained in the blood. The relation is more constant between the proteid and hæmoglobin; and, in regard to the total solids, there are few exceptions where the number expressing the residue left on drying does not approximately indicate the total of proteids. The relation between the proteids of the entire amount of blood and those of the blood serum is, on the other hand, very variable. This seems to be due not so much to fluctuations in the proteids of the serum as of the amount of blood, although kidney diseases form an exception to this, and show great fluctuation in the proteids of the blood serum. Diminished proteids and an increase in the amount of water present are conditions that exist in all forms of anæmia, yet, as the author shows, exist to a greater or less extent in other diseased conditions, as in typhus, and therefore belong to no particular disease. The author characterizes these conditions as hypalbuminæmia and hydræmia. Observations of these changes in œdema of the lungs were made, and they are interesting as indicating to what extent this condition of the blood serves as a factor in producing it.

It was found that the highest grade of hydræmia might exist without œdema, and, on the other hand, that there might be œdema without an accompanying increase in the water of the blood. And there is no parallelism between an œdematous condition and reduced proteids. In diabetes there is an increase in the total solids of the blood, attributable to the amount of sugar.

Metabolism in Fever.—Dr. Richard May (*Zeit. f. Biol.*, xxx) gives the following conclusions from experiments: 1. The absolute amount of heat produced (caloric production) is increased in fever. 2. This increase depends upon the increased amount of proteids destroyed (fever in hunger). 3. The amount of proteid decomposed in fever can be diminished by the ingestion of carbohydrates. 4. Glycogen decreases in fever more rapidly than at the normal temperature. 5. The nitrogen carbon ratio in the urine is changed in fever, the urine being richer in carbon. 6. The increase of proteid destruction in fever is chiefly dependent on the increased requirement of the organism for carbohydrates. The degeneration of cells is not essentially related to the increased nitrogen separation in the urine.

Peptone Formation in the Stomach of Infants.—Dr. Siegfried Toch (*Archiv für Kinderheilkunde*, xvi) has attempted, in a series of observations on the stomach contents, to ascertain whether peptonization occurs as a result of normal digestion in infants, and to what extent such a process is influenced by conditions of disease. At the outset the author falls into error by employing the term peptone in the older meaning and by using a test which does not distinguish between peptones and proteoses. Proteoses are always formed, as is generally known, whenever milk sours, and in some cases perhaps as a result of the action of rennet. Hence in the present observations the author found a positive reaction for "peptone" in every instance, even when only a half-hour had elapsed after taking the milk into the stomach. Further investigation showed him that this could not be justly attributed to pepsin action, since the gastric juice, although containing pepsin, was inactive toward proteids till after the addition of free hydrochloric acid. He therefore is led to believe that the "peptone" (proteose) was formed in every case by the coagulating ferment. His observations are of interest as showing the presence of pepsin in the gastric juice of infants suffering from acute and chronic diseases of the stomach, and led the author to believe that the peptonization of milk so frequently resorted to in disorders of this kind was uncalled for and entirely superfluous.

Miscellany.

The Status of Acting Medical Officers of the Army.—Dr. John T. Nagle concludes his pamphlet on *The Status of Acting Assistant Surgeons of the United States Army who served in the late Civil War*, to which we alluded briefly last week, with the following summary:

The evidence which I have presented is almost entirely derived from official sources, and shows that during the late civil war commanding officers were empowered by the *Revised United States Army Regulations* of 1861 and 1863 to employ private physicians as medical officers when it was necessary; that these physicians were required to pass an examination before an army medical board, and, if reported favorably by it, they obtained the position of acting assistant or contract surgeon when their services were needed; that before they signed the contract of enlistment to perform the duties of medical officers, agreeably to army regulations, as conditioned in form 18 of the *Revised United States Army Regulations* of 1861 and 1863, they were sworn into the service by a commissioned officer of the army, in accordance with the form of oath which is prescribed in the 10th article of war which was in force in 1861 and 1863, being the oath of allegiance, service, and obedience, which they were also required to subscribe to, and which was similar to what was required of any officer or soldier before entering the service; that these officers were designated officially as acting assistant surgeons, United States Army, or contract surgeons, and were necessarily assimilated as to their *duties, pay*, and *status* to assistant surgeons of the army, with the rank of first lieutenant when serving with troops in the field, but their pay was less when serving in the United States general or military hospitals; that the *Revised United States Army Regulations* which authorized their employment were authorized by Congress, formulated by the Secretary of War, and approved by the President; and these regulations were, by the command of the President, published for the information and government of the military service as the sole and standing authority on the matter therein contained, and nothing contrary to the tenor of these regulations shall be enjoined by any commander whatsoever; that they were also discharged by their commanding officers in writing, a copy of which was required to be sent to the surgeon general of the army, stating explicitly the date and cause; that the word "officer" is not defined in the *Articles of War* of 1861 and 1863 as being limited to commissioned officers; that the orders, passes, and other evidence of superiors show that they were a part of the military establishment and governed by the rules and articles of war and amenable to *Army Regulations*, and that they were subject to the same control as all other medical officers; that general orders of the War Department recognized them as officers with rank of first lieutenant in the allowance of fuel and quarters; and placed them in the position of commissioned officers; that the act of June 23, 1874 (18 Stats., 244), entitled an Act to Reorganize the Several Staffs of the Army, Sec. 4, reduced the number of contract surgeons by limiting it to seventy-five; that these medical officers were paid from the appropriation for the support of the army authorized by Congress; that the Treasury Department paid them for services as medical officers; that the United States Supreme Court has decided that, while there was no act of Congress which expressly authorized the appointment of persons, the appropriation by Congress to pay them is a recognition of the validity of their appointment (Wells *vs.* Nickels, *United States Reports*, 104, p. 444); that their duties were well defined, being the same duties that were required of commissioned medical officers; that Sec. 4695 of the *Revised United States Statutes*, in awarding pensions for total disability according to rank of office, gives the acting assistant or contract surgeons the same pension as is granted to a first lieutenant of the military or marine corps; that they were subject to the jurisdiction of courts-martial, and that Sec. 1342, Art. 64, *Revised United States Statutes*, specifies that officers and soldiers of any troops shall be subject to be tried by courts-martial; that they were required to wear the uniform of an assistant surgeon with the rank of first lieutenant; that they were in charge and had complete military command over the persons (including officers and soldiers of the Veteran Reserve Corps) and property connected with the United States general or military hospitals; that they took their places as officers on military ceremonies and at the mess; that letters submitted from officers of the army, official orders, the *Medical and Surgical History of the War of the Rebellion*, prepared under the direction of Joseph K. Barnes, surgeon general of the army during the late civil war, corroborates the proof already submitted that medical officers employed in accordance with the *Revised United States Army Regulations*, known as acting assistant surgeons, United States Army, or contract surgeons, were officers; that the Attorney General of the United States and Solicitor General of the United States gave it as their opinions that acting assistant or contract surgeons were in the military service of the United States on very meager evidence, such as the production of a few orders, and despite the opinion to the contrary of the Judge Advocate General of the Army, whose opinions were at variance with facts and found their way into Winthrop's *Digest* and were quoted by them; that a *Treatise on Military Law*, by Lieutenant Rollin M. Ives, 5th Regiment of Artillery, assistant professor of law, Military Academy, page 61, shows that acting assistant or contract surgeons were recognized by the United States Court as being in the military service of the United States and entitled to the provisions of Sec. 2166 of the *Revised Statutes.* This provides that alien soldiers, honorably discharged, are required to reside in the country only one year to become naturalized; that in the same book and on the same page it is stated that they should be considered amenable to military law; that the acting assistant or contract surgeon performed military service under the orders of a superior for a considearble period of time, was paid from the appropriation for the support of the army, was sworn into the service by a commissioned officer, his contract of enlistment being to serve for a period of not less than three months, agreeably to army regulations, was discharged from the service by a commissioned officer, the reasons for which were required to be sent to the surgeon general of the army, is sufficient evidence of enlistment, as set forth by Winthrop's *Military Law*, vol. i, page 774, entitled Form and Evidence of Enlistment; that medical cadets who ranked as brevet second lieutenants were employed as dressers, etc., under the immediate supervision of the ward physician of a United States general hospital; acting assistant surgeons were generally ward physicians in United States general hospitals, and Section 5, act of Congress, approved August 3, 1861, states that these cadets "shall act as dressers in the general hospitals under the *control of the medical officers alone*"; that acting assistant surgeons, Unites States Army, were considered competent medical officers by the medical director of the department of Washington; that acting assistant surgeons, United States Army, were considered as medical officers and free from draft by the War Department in the formation of Hancock's Corps (United States Veteran Volunteers); that the medical director of the Department of Arkansas, Pennsylvania, and all other States, recognized acting assistant surgeons as medical officers in official reports; that acting assistant surgeons, United States Army, were in charge of the river transportation of disabled soldiers and ambulance trains and in charge of the United States general hospitals for the care of contagious diseases, post hospitals, and assigned to regiments in the field whose commanders requested the surgeon general or the medical directors to have medical officers assigned them; that acting assistant surgeons, United States Army, were required to serve as officers of desertion boards, and performed all other duties that were required of medical officers of the army; that the most eminent surgeons and physicians of the country served as acting assistant surgeons; that many who served as acting assistant surgeons, United States Army, are serving as commissioned medical officers in the United States Army, and have served in the United States Volunteers, United States Veteran Volunteers, State Volunteers, United States Colored Troops, and in the Navy; that they were accorded the same obedience from, and the same authority over, the enlisted men as was possessed by the commissioned medical officer; that their authority received the same acknowledgment from superiors, both in the field and in Washington, as was given to the regular or volunteer medical officers, and they were equally held to conform to the rules and articles of war as they were; that such authority and duties could not be exercised by other than officers of rank.

The Eleventh International Medical Congress.—A letter directed to the undersigned by the secretary general of the Eleventh International Medical Congress, dated December 19, 1893, contains the following communications: "American members will pay on the English, French, and Italian railways single fares for double journeys, and will obtain a reduction of twenty per cent. on fares for Italian round-trip tickets. The documents required for their identification will be sent to you in January, and Americans intending to visit the congress will have to apply to you for them. Full particulars concerning the journeys will accompany the documents. Messrs. Thomas Cook & Son, London, Paris, Rome, and Naples, should be applied to for accommodation and for tickets for the excursions at Rome, at Naples, and to Sicily. Such excursions will be arranged at Rome under the guidance of Mr. Forbes, member of several scientific societies and correspondent of the *Times*—for Naples, three days, including Vesuvius, Pompeii, Capri, Sorrento, Castellamare, Bajae, etc.; for Sicily, ten days from Naples, including Messina, Taormina, Catania, Girgenti, Siracusa, Palermo, and return to Naples. The fares for members of the congress will be considerably reduced, and comprise hotel accommodations, carriages, guides, boats, etc.—about 70 francs each for the three days and 285 francs for the ten days. Full particulars concerning these excursions will be contained in a leaflet to be added to the instructions and documents for the journey."

From former communications the following are herewith quoted: The member's fee is five dollars, that of his wife or an adult relation two dollars each. Checks or money orders may be sent to Professor L. Pagliani, Rome, Italy. Credentials have been promised in the near future. When they arrive (none were received last year), they may be too late for many who have started or are about to start. The undersigned, who is not informed of the cause of delay, proposes to supply, in as official a form as he thinks he is justified in doing, credentials which are expected to be of some practical value. The North German Lloyd has promised to recognize them. It is suggested, besides, that a passport may increase the traveler's facilities. Only the North German Lloyd (22 Bowling Green) and the Compagnie générale transatlantique (3 Bowling Green) have thought fit to grant any reductions to congressists. The reductions on Italian railways are available from March 1st to April 30th. A. Jacobi, M. D.,

110 West Thirty-fourth Street, New York.

An Army Medical Board will be in session at Washington City, D. C., during April, 1894, for the examination of candidates for appointment to the medical corps of the United States Army, to fill existing vacancies. Persons desiring to present themselves for examination by the board will make application to the Secretary of War before March 15th for the necessary invitation, giving the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates, based on personal acquaintance, from at least two reputable persons, as to citizenship, character, and habits. The candidate must be between twenty-two and twenty-eight years of age and a graduate from a regular medical college, as evidence of which his diploma must be submitted to the board. Successful candidates at the coming examination will be given a course of instruction at the next session of the Army Medical School, beginning in November, 1894. Further information regarding the examinations may be obtained by addressing the Surgeon General, United States Army, Washington, D. C.

A Four-years Course at Jefferson Medical College.—At a meeting of the faculty of Jefferson Medical College held on January 8th it was unanimously resolved to institute a compulsory four-years course with the session of 1895-'96. This step, it is announced, was taken in order that the large clinical service of the Jefferson College Hospital (350 cases a day) might be made use of to the fullest extent in carrying out the desire of the faculty to provide advanced medical education of a practical character.

The Society of the Alumni of St. Luke's Hospital held a stated meeting at the hospital on Tuesday evening, the 9th inst. No formal paper was read, but cases were reported by the following members: Dr. Caswell, specific endarteritis with right hemianopsia; Dr. Southworth, two heart cases; Dr. Vaughan, pelvic hæmatocele; Dr. Bailey, ulnar neuritis with tumefaction along the course of the nerve; Dr. Mabbott, cephalæmatomata; Dr. Tiemann, functional albuminuria; Dr. Beyea, splenectomy, also cicatricial stenosis of the pylorus cured by a plastic operation. After the discussion of these cases a collation was served.

Summer Courses in Practical Obstetrics in the Sloane Maternity Hospital of the College of Physicians and Surgeons.—Three courses, each lasting four weeks, will be open to physicians and medical students. Each class is positively limited to six. The three courses will be the same, so the only choice is in regard to the date.

The first course begins June 4th and ends July 2d; the second begins July 2d and ends July 30th; the third begins August 27th and ends September 24th.

Each course offers the following advantages: I. *Forty lessons in operative obstetrics* (ten each week). Each student in turn will practice upon the phantom all the common and most of the rarer obstetric operations under the instruction of Dr. Tucker (twenty lessons) and his assistants (twenty lessons). These exercises, in connection with the large operative service of the hospital, are of great practical value. II. *Attendance at all births in the hospital.* About sixty or seventy may be expected in four weeks. Clinical instruction and every facility for observation of births, normal and abnormal, will be given. III. *Instruction in the treatment of puerperæ and infants.* Students in turn will make rounds daily with the house staff and receive clinical instruction. IV. *Instruction in abdominal palpation and auscultation and vaginal touch.* Examination of gravidæ will be practiced daily by each student in turn. The fee for a course, including the use of the dormitory, is fifty dollars, payable in advance. No partial courses are given. For further information apply to Dr. E. A. Tucker, resident obstetrician.

State Asylums and Lunacy Boards.—The *British Medical Journal* for December 23d said editorially:

"We note in the American press a warm dispute between the Lunacy Board of the State of New York and the asylums under its supervision. There are occasionally times in England when the managing committees and the superintendents of asylums feel disposed to resent the interference of the Board of Lunacy in Whitehall. It is impossible, however, for us to conceive the commission even taking the position which they recently assumed in America. There would instantly be a revolt, with a result not difficult to predict. The management of State hospitals for the insane in the United States is essentially different from the county asylums of England. Practically the lunacy board in the former country has come to bear the same authoritative relation to the institution that the County Council, representing the ratepayers, does with us. The committee of management goes to the wall. It is easy to understand that the orders of the latter would be much more likely to be received with respect than those of a board not meeting on the spot, and not in a position to judge of the administrative needs of an asylum. We have not, of course, any right to assume that there has been no need for reform in the expenditure of the New York hospitals for the insane. What seems to us inexplicable is that the power over the commissariat should be transferred from the managers to a central board. The former have issued a protest in which they say 'the commission is a centralization of power, and is putting into three men's hands more authority than was hitherto intrusted to the several boards of managers'; and they add, 'if any manager, any superintendent, or any board of managers has been recreant to their trust, it is proper to publish that fact, but it is neither dignified nor decent by generalization to indulge in wholesale defamation.'

"What is called the 'State-care system' came into force in October, 1893. In an article in the Utica *Morning Herald*, December 4th, a statement is made which, if true, indicates an extraordinary, and indeed intolerable, state of things. 'Under it the State Commission in Lunacy exercises centralized power. No purchases can be made, employees engaged, or repairs effected without its authority. So tightly are the reins of power held that the other day, the supply of oil having given out at the Utica Hospital, and authority to purchase not having been granted, an employee was obliged to carry his State lamp to his home and fill it from his private can!'

"The same paper maintains that the State of New York, in decreeing, as it has done, State care of the insane, did not contemplate 'saving' by the hampering and harassing asylum administration which has now occurred, and proceeds: 'The people will not tolerate any such interpretation of their action or purpose. They are humane and able to provide for such of their fellows as are the most unfortunate of human beings the comforts which the judgment of the trained specialists and intelligent local managers decide to be needful and wise.'

"After reading the articles which this controversy has called forth, it appears to us that under the new system in New York the asylum superintendents in the State are degraded; that the managers can not purchase the smallest item of supply without permission from the commissioners, who revise quantity and prices, and may even suggest where purchases shall be made. It is very evident that estimates may be arbitrarily reduced without regard to the special needs of the asylum, in order to make the taxpayer believe that a great 'saving' has been effected. We confess that, in view of the great abuse of centralization which appears to have been committed by the lunacy board, our sympathies go with the managers who have revolted, in the absence of any proof that they have failed in their duties to the State. If they have failed, let their places be filled by better men. We have no faith in the detailed administration of several asylums by a central board composed, we believe, of only three men."

Cologne Water in the Treatment of Slight Affections of the Air-passages.—At a recent meeting of the *Société des sciences médicales de Lyon*, reported in *La Province médicale* for December 16th, M. Gabriel Roux made a preliminary communication on what he termed a very simple and rapid means of cutting short acute inflammation of the upper air-passages at the start. Special reference was had to an affection that is very common in Lyons, formerly described under the name of catarrhal fever, in reality a sort of naso-pharyngo-laryngo-tracheitis. The remedial measure consists in inhaling very energetically by the nose, but especially by the mouth, several times in the course of the day, cologne water poured upon a handkerchief. The inhalation of the vapors disengaged by the cologne should be deep enough for an intense, disagreeable, and painful, but not persistent, smarting to be felt either in the nasal passages or in the back part of the throat. This inspiration ought to be made either exclusively by the nose or exclusively by the mouth, accordingly as the object is to act upon the symptom of coryza or upon the pharyngo-tracheitis; but—and this is to be particularly borne in mind—the jugulatory action is infinitely more decided and certain upon the mucous membrane of the pharynx and larynx than upon that of the nose, so that inflammation of the two mucous membranes first mentioned will be found to have subsided completely while the coryza still continues. This invariable occurrence warrants a complete separation of the effect produced from that of certain irritant vapors, such as those of ammonia, iodine, etc., on the pituitary membrane. M. Roux gives the history of eleven cases in which the result had been not only excellent, but of truly astonishing suddenness, and he added that it was just this rapidity of action that had induced him to bring the matter before the members of the society, for in itself it was of small importance, but might under certain circumstances be of service. In less than twenty-four hours, indeed, a cold in the head, accompanied by slight fever, chills, prickings in the throat, hoarseness, coryza, and cough, had completely yielded, if the treatment referred to had been used at the outset, after four or five inhalations lasting from two to three minutes each. The form of cologne water used by M. Roux was that of the Hôtel Dieu, somewhat different from that of the *Codex*, especially in the substitution of the essential oil of unripe bitter oranges for neroli.

The New York Academy of Medicine.—The special order for the meeting of Thursday evening, the 18th inst., was a paper entitled Observations on Excessive Intestinal Putrefaction, by Dr. C. A. Herter.

At the next meeting of the Section in Laryngology, on Wednesday evening, the 24th inst., Dr. J. E. Weeks will report a case of tracheotomy for syphilitic stenosis of the larynx.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 25th inst., a paper on Small-cystic Degeneration of the Ovary will be presented by Dr. F. Foerster, and one entitled What are the Indications for a Vaginal Examination? by Dr. E. B. Cragin.

Color-hearing.—In the *Gazette hebdomadaire de médecine et de chirurgie* for December 16th Mlle. N. Astier gives the following account of her own case: "I must have been seven or eight years old when I began to notice and to signify to others the connection that for me existed between certain colors and certain sounds or letters. In the books of my childhood every letter *o* was red and every *i* was blue; these color effects resulted in inducing the other members of the family to perceive the colors which I saw at first, whether by looking at the printed letter or on hearing the corresponding sound. There were only three letters that I saw distinctly: the red *o*, brilliant and luminous as a fine wild poppy; the *i* of a dull indigo blue, and the black *u*. Other vowels and the consonants had no special colors; they borrowed the tint of the nearest colored vowel. Words that contained both *o* and *i* appeared violet; this color, which I could not tolerate, brought to my mind certain odious names, among others my own given name, which I could not hear without experiencing the same sort of pain as is produced by hearing a discord. I had a very disagreeable feeling on looking at anything blue or at the letter *i*, and at the age of eight or nine years I refused to write this letter in the names of those I loved, but I added it to the names of those I disliked. When I read, I saw the color on the book, very vivid on the vowel and radiating all around the word; when I listened to the word, the tint floated before my eyes, without definite form, comparable to a uniform and evanescent phosphene. Figures did not seem to me to be colored, except seven and eight, the former being agreeable and red like *o*, and the latter disagreeable and blue. Colors were associated also with musical sounds and with noises; the full, rich tones of the organ, those of the violoncello, and those of the voice in the medium register were red, brilliant, and warm; grinding sounds, the harsh sounds of the voice, those of the clarinet, and those of the violin were blue; the tint always depended on the quality of the sound, not on the note, and its intensity varied with the instrument. The color sensation evoked by an orchestra depended also upon the quality of the combination of sounds. The impressions caused by seeing color and by hearing sound were of the same nature; the one aroused the other. The scraping of the bow on the finest string of the violin caused a blue spot to appear before my eyes; the sight of this detested blue made me hear sharp sounds or the letter *i*. I extended these associations to my sentiments of affection; certain persons had a halo of red or blue according as I liked or disliked them. These sensations were extremely intense from the age of nine to that of fourteen. I was then in very bad health and excessively nervous. As my health became re-established I paid a good deal less attention to these phenomena of color-hearing, and when I took a new survey of myself, some years ago, I found that these vowels, read or heard, no longer gave me the sensation of color. One remembrance remains very clear with me; when I hear certain letters or certain sounds, I sometimes think of the colors formerly called up by them, and can occasionally cause a feeble image of them to reappear, but the vision has not been produced spontaneously for a long time now. I never knew any member of my family who was affected with color-hearing."

Proposed Legislation concerning Capital Punishment in Ohio.—We learn that the following bill is to be introduced into the Ohio Legislature during the present session:

"Be it enacted by the General Assembly of the State of Ohio that Sections 7338, 7339, and 7341 of the Revised Statutes of Ohio be amended so as to read as follows:

"Section 7338 amended to read: 1. That all persons sentenced to death by any court having jurisdiction in the State of Ohio shall be held as subjects for experimental research; that such experiments shall be conducted in the interest of science and society, and shall be regulated by approved rules of humane treatment to avoid all unnecessary pain; that in the preparation for such experiments, where pain would be occasioned, anæsthetics shall be administered to the extent of complete insensibility to pain, and during the progress of the experiment narcotics shall be judiciously used to allay any pain, and the condemned person shall not be maltreated in any way; that after the conclusion of such experiments the criminal shall be again anæsthetized and put to death while in a deep sleep and entirely insensible to pain; that the executioner shall be an expert physiologist duly appointed and authorized by the State, and that such appointments to execute and conduct such experiments shall be vested in the Governor, and shall consist of one executioner and five assistant physiologists, with a like number of deputies, who shall hold their office for the term of good behavior, except upon proof of incompetency; and no one so appointed shall be removed without sufficient cause, which shall be left to the discretion of the Governor, and that all appointments to fill vacancies caused by death, resignation, or removal shall be made as prescribed in the foregoing.

2. All executions of the death penalty according to the provisions of this bill shall take place within a building provided for that purpose and so constructed as to safely and comfortably lodge all capital criminals until the completion of the execution; that such criminals shall be in the custody of a warden or deputy warden and board of managers, who shall provide for their safe and comfortable keeping; that the execution of the sentence shall commence on the day fixed by the judge passing the sentence, unless a suspension of execution be ordered by the Supreme Court or two judges thereof.

"Section 7339 amended to read: When a person is sentenced to death, all writs for the execution of the death penalty shall be directed to the sheriff by the court issuing the same, and the sheriff of the county wherein the prisoner has been convicted and sentenced shall, within the next thirty days thereafter, in as private and secure a manner as is possible to be done, convey the prisoner to the institute provided for capital criminals, where the said prisoner shall be received by the warden and securely kept; and the sheriff shall receive for conducting the prisoner sentenced to death to the institute for capital criminals the same fees and mileage that is [*sic*] provided by law in other cases, when duly approved by the warden of the institute.

"Section 7341 amended to read: That no one shall be present at experiments and executions except the warden or deputy warden in charge of the prisoner, the executioner, assistants, and deputies, and those who have duly qualified themselves to comprehend the experimental work; that such qualifications shall be determined by a board of examiners, who shall issue a certificate which shall admit the holder to witness the experiments and executions; that at the conclusion of each execution a written report shall be required of the body of physiologists which shall contain a correct account of the result of the experiment and execution, and that such a report shall be made within thirty days from the infliction of death, and recorded in the archives of the institute, and of which a certified copy, together with the warrant, shall be forwarded to the clerk of the county from which the prisoner was sentenced, who shall record the warrant and returns in the record of the case.

"That Section 7338 as amended May 12, 1886, Section 7339 as amended April 29, 1885, Section 7341 as amended March 21, 1887, and Section 7343 as amended May 12, 1886, of the Revised Statutes of Ohio be hereby repealed."

An Early Symptom of Hereditary Syphilis.—The *Centralblatt für Chirurgie* for December 23d gives a summary of an article by Dr. Carini, of Palermo, published in the *Internationale klinische Rundschau*, in which the author remarks that children with hereditary syphilis often appear quite healthy at first. The early symptoms hitherto recognized, he says, often do not appear until some weeks after birth, and some of them, like roseola, are so fleeting that an early diagnosis is rendered very difficult. Positive congenital signs are not common. As early a diagnosis as possible may, however, be of the greatest practical importance. Accordingly the author calls attention to a symptom which, although standing in no apparent connection with syphilis, he has observed invariably in his cases—namely, the occurrence in the course of a few hours after birth of uncommonly obstinate hiccough, lasting from a week to three weeks. In every case a diagnosis founded on this symptom was subsequently justified. The author believes that this hiccough depends upon a neuropathic diathesis to the development of which syphilis contributes materially. The hiccough proves obstinate to all ordinary treatment, but disappears after the mother has taken large doses of potassium iodide and the nursling has been treated with Van Swieten's solution.

A Mode of Compressing the Abdominal Aorta.—In the January number of the *Annals of Surgery* Professor William Macewen, of Glasgow, thus describes a method that he says he has tested sufficiently to feel warranted in making it public:

As the patient lies on his back on the table, the assistant, facing the patient's feet, stands on the left side of the table in a line with the patient's umbilicus. He then places his closed right hand upon the patient's abdomen a little to the left of the middle line, the knuckles of the index finger just touching the upper border of the umbilicus, so that the whole shut hand will embrace about three inches of the distal extremity of the aorta above its bifurcation. The assistant then, standing upon his left foot, his right foot crossing his left and resting upon the toes of the right—an attitude commonly assumed by public speakers—leans upon his right hand and thereby exercises the necessary amount of pressure. With the index finger of the assistant's left hand the weight necessary for the purpose can easily be estimated by the effect produced upon the flow of blood through the common femoral at the brim of the pelvis. Whenever the flow of blood through the femorals is absolutely arrested the abdominal aorta is sufficiently controlled, and no further weight ought to be applied.

The weight exercised can be varied at will by increasing or decreasing the angle which the assistant's body makes with the floor.

As the abdominal aorta sometimes bifurcates higher than usual, before the operation is commenced a trial of the effect of the pressure at the part selected ought to be made, testing the result of pressure on *both* femorals. When both are equally controlled the bifurcation occurs below the point pressed on; when only one is controlled the hand requires to be placed on a more proximal part.

As there is no direct muscular effort required in maintaining the pressure further than the preservation of the equilibrium, the position can be maintained by the assistant without undue strain on his part, and without shifting his hand for at least half an hour, a time amply sufficient for the performance of most operations requiring the control of the circulation through the abdominal aorta.

In order to eliminate the personal equation, the author has usually selected a different person each time he has had occasion to control the abdominal aorta, and, while there were slight differences between the various persons chosen, the object was always efficiently secured. The majority of those who exercised pressure in this way said, at the end of the operation, that they could have further maintained the pressure for a considerable time.

Among the cases in the author's practice in which the abdominal aorta was thus controlled were disarticulations at the hip joint, amputations at the upper third of the femur, large pelvic vascular tumors, intrapelvic hæmorrhage, and traumatic hæmorrhage from the external iliacs; in all the control of the circulation was absolute. In the amputations of the hip none of the patients lost from the proximal side of the cut vessels more than two ounces of blood, and that only from the oozing of the general surface; there was none from the main vessels. In amputations also, after the main vessels were ligatured, the assistant could, by a slight momentary relaxation of the pressure, "show" the position of any hidden or retracted vessel without altering the position of the hand relatively to the aorta. This form of pressure would be equally valuable, the author says, for uterine hæmorrhage.

A priori, he continues, one might fear that pressure might be exerted on some of the coils of the small intestine and thereby produce injury. As far as one can judge, this did not result. Only on two occasions did the patient complain, for a few hours after the operation, of a sensation of pain over the part pressed on, which was only elicited on interrogation. All the others, though specifically asked, said they had no pain.

There is one point to be guarded against. Should the patient vomit or cough violently the pressure would require to be increased, as otherwise the muscles in the abdominal walls are apt, during the strain, to elevate the hand from the aorta. The operation during vomiting might be postponed for a few minutes while local pressure was applied.

The author has applied this method in his practice for over fifteen years, and has found it simple, always ready, easily applied, and efficient.

Lectures and Addresses.

THE INCH-AND-A-HALF INCISION AND WEEK-AND-A-HALF CONFINEMENT IN APPENDICITIS.

A LECTURE AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL, *October 28, 1893,*

By ROBERT T. MORRIS, A. M., M. D.

In all probability there is not a member of this audience who has not lost one or more friends from appendicitis. That remark applies not only to you, but to every man in the United States, and that means a good many deaths from one disease. These deaths would have been unnecessary if the patients were where they could have had the benefit of the inch-and-a-half incision as soon as the first symptoms of appendicitis occurred. Then, again, the subject is unfairly stated in terms of life or death, for I have tried here to lay down the cardinal principle that every hour of progress of an acute attack of appendicitis means increased damage to viscera, and the deduction is clear that patients who run the gantlet without operation are left with many a defect and many an anxiety. The physician who reports the patient as cured after an acute attack has subsided does not intentionally make a fraudulent statement. He is so solicitous for the patient's welfare that he deceives himself. Most of the appendicitis cases that come to us deliberately for operation have been discharged as cured by their physicians. Not long ago two rival physicians were present at the bedside of the patient upon my arrival. Dr. Smith favored immediate removal of the appendix and Dr. Jones was opposed to the idea, stating that he had never lost a case under medical treatment. Dr. Smith, who was rather bluff in manner, said to Dr. Jones: "Oh, yes, I know all about your patients. The ones that died had obscure cases of typhoid fever, or intestinal obstruction, or peritonitis, and the ones that recovered were appendicitis." One reason why the members of the profession are slow in acting according to the principles involved is because no one of artistic temperament enjoys the thought of a great gash in a fair young belly, and that is why I have developed the inch-and-a-half incision and the evanescent scar. The week and a half during which I keep the patient in his room after this operation is less than the average time of confinement with one attack of appendicitis, and then there are no more attacks. The mass of special knowledge in the profession to-day is so great that the left hand does not know what the right hand is doing, and post-graduate instruction is of great advantage if it succeeds in simply informing men as to what others are about. If unnecessary deaths and disaster from appendicitis are occurring all around us, it does not mean that physicians are neglectful. It means only that men, by conscientious devotion to their patients' best interests, have built up an engrossing practice which, from its very magnitude, obscures the view of a small special operation. As soon as I can establish as standard the inch-and-a-half incision and the week-and-a-half confinement in appendicitis, the general practitioner will have no difficulty in deciding just what to do at the very outset of an attack. Some of the operations that I have done here before the class were upon physicians who came at once for operation in their own cases when they would have hesitated about sending a patient. Bear well in mind the fact that in its nature appendicitis is an infectious inflammation which persists at the focus after medical resources have caused subsidence of any one attack, and do not forget that it causes increased damage to viscera with every hour of progress.

The patient upon whom we are now to operate is a young mother, twenty-five years of age. Shortly after childbirth, a year ago, she was attacked with appendicitis, and has not been quite well since. According to my theory, the efforts of parturition crowded the appendix against the pelvic wall and crushed its adenoid layer. Bacteria entered the injured tissue, which swelled until it choked within the confining tube of muscular and peritoneal coat. If any other part of the bowel had been injured in the same way there would have been plenty of room for the swollen adenoid tube, and it would have protected the patient by its action as a strainer for bacteria, but in the appendix it met with a mechanical obstacle in the narrowness of its muscular and peritoneal sheath.

Let us measure off an inch and a half over the site of our patient's appendix and make the line oblique enough to lie in the trend of the external oblique aponeurosis. An incision three quarters of an inch in length would suffice for this patient, and in a fleshy patient two inches might be necessary; but I am making the incisions here of one length in order to establish a standard. With a little narrow scalpel I now incise down to the transversalis aponeurosis, and before opening this and the peritonæum a loop of catgut is introduced as a holder for the two latter structures, so that we can find them ready for a neat approximation with sutures after the operation. As the peritonæum is opened you all recognize the broad longitudinal muscular ribbon which is peculiar to the colon. A bit of sodic chloride placed upon the bowel excites reversed peristalsis, and then we know in which direction to follow the colon ribbon, which leads directly to and ends exactly at the appendix. The cæcum and appendix do not come

readily into the opening, so I insert one finger into the abdominal cavity and separate adhesions. This is not to be done through the small incision by any one who is not quite familiar with adhesions. Now you can all see the exposed cæcum and the mass of adventitious tissue which bears in its midst the hidden appendix. A very little dissecting exposes the tip of the appendix, and then the whole structure is liberated. It is ligated with a fine strand of eye silk close to the cæcum and the stump is buried with three Lembert sutures. If perforation should occur beneath the ligature, the new adhesions under the Lembert sutures would protect the patient. The only two deaths that I have heard of as occurring after operations "in the interval" of exacerbating appendicitis were caused by perforations of the stump below the ligature, the operators having failed to recognize the fact that perforation was very likely to occur at precisely that point, because the stump tissues, though apparently in quiescent condition, were nevertheless dangerously infected. However, this was a thing which had to be learned in the evolution of the operation before its present ideal technique had been developed. Our next step consists in lifting up on the catgut loop in the wound and accurately uniting the margins of the peritonæum, transversalis fascia and aponeurosis, and internal oblique aponeurosis. Look now at the movements of the external oblique aponeurosis as the patient breathes, and you will readily understand why the surgeon would not unite all structures of the abdominal wall with one tier of sutures, while the muscles were intended by Nature to glide over each other in different lines of traction. The external oblique aponeurosis sutured, an assistant puts the little skin wound upon the stretch with a couple of hooks, so that I can make a beautiful approximation of skin margins with five-day catgut and leave my evanescent scar. These patients do not have hernia after an operation of this sort. Examining the removed specimen, we observe that the larger part of the adenoid and mucosa present the white and cheesy appearance of tuberculous degeneration, while about an inch of the appendix is still whole; but, as the ostrich farmer on the Midway would say, "Bright and lively; going on all the time; no waiting for the performance." If this is tuberculous, as appendices not infrequently are, nothing could illustrate better the farce of waiting for a proper time to operate. The insidious disease would infect the whole peritonæum before the patient was ready to demand operation.

There is no more empty mockery of wisdom than the expression "using judgment" in appendicitis, which perforates, which infects the liver or the lungs, which causes thrombosis of the blood-vessels, at a moment when the patient's pulse and temperature and respiration are all normal and when there is no pain. We shall never have a classification of symptoms in this disease for the guidance of the general practitioner, because the most satanic cases may be cases with practically no characteristic symptoms, and the cases with outrageously definite symptoms may go on to almost perfect recovery. It is enough to know the nature of the disease, and then, acting from a standpoint of principles, the appendix will be removed as a matter of custom as soon as the first symptoms of appendicitis occur. In this appendix there are no seeds. Seeds in the appendix are mythical for the most part, and I hope that we shall hear less about them in the future, when a more careful examination is made of the seed-like phosphatic or fatty concrements that are so common. I used to find grape seeds and apple seeds and cherry pits in the appendix, but since these have been subjected to exact chemical analysis I frequently make my luncheon of a bottle of koumiss and a couple of pounds of grapes, swallowing every seed, because I have not as yet found anything excepting concrements in the whole collection of seed-like objects from removed appendices.

A member of the class asks why I scarified the peritonæum before burying the stump of the appendix in this patient. That was done in order to excite a local peritonitis for plastic purposes. We need to disturb the peritonæum pretty well in order to get a response. The peritonæum is the surgeon's little friend. It drinks up infected exudates, and it walls in the weak spots. Without the help of the peritonæum we should be unable to do successfully the many abdominal operations which are done with such ease and safety. Peritonitis as a result of surgical operations is something which occurs frequently among the leaves of the older text-books, but it is something with which the surgeon is unfamiliar.

Original Communications.

A CONTRIBUTION TO
THE ARRANGEMENT AND FUNCTIONS OF THE CELLS OF THE CERVICAL SPINAL CORD,

TO WHICH IS APPENDED A NOTE ON
CENTRAL CHANGES SECONDARY TO LONG-CONTINUED DISUSE
OF AN EXTREMITY.

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(*Concluded from page 45.*)

A DRAWING from the second cervical segment shows (Fig. 5) on the left side of the gray matter the anterior group of cells for the back muscles and the accessorius nucleus to be intact. Stilling's nucleus internally at the junction of the gray commissure and the base of the posterior cornua, and the scattered cells with the beginning of the middle and lateral columns, seem likewise to be normal. At this level on the right side the pathological changes first show themselves. We notice that the anterior nucleus for the back muscles, the accessorius nucleus, and Stilling's nucleus are apparently normal. The middle and lateral cells are, however, almost entirely absent. A few middle and small scattered cells are to be seen at the base of the anterior horn.

As the sections are studied from this point to the third cervical segment, there is very little change from what has just been stated except that the scattered cells on the right side become less numerous. Sections from the third cervical show that the anterior nucleus and the accessorius nucleus are intact on the right side, but the scattered cells and a few cells of the middle column that were to be seen in the section above have disappeared (Fig. 6). In some of the sections a few cells corresponding to Stilling's nucleus are to be seen at this level. The anterior group and the lateral cells are entirely absent on this side at this level, but very distinct and well marked on the left side, as are all the other cell groups. Lower down in the third segment the cells that are to be seen in the ventrad portion of the anterior cornua are not closely differentiated into nuclei (Fig. 7). At this level the nucleus of the phrenic nerve normally shows itself. It is in all probability the presence of the cells from which the phrenic takes its origin that causes the bunched appearance here of the cells in the shrunken cornu.

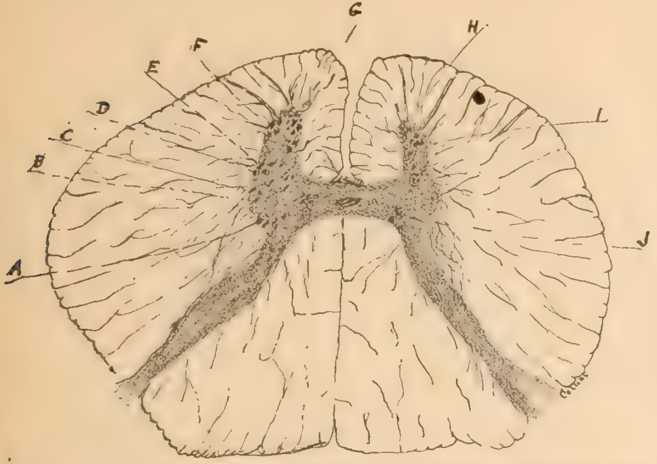

Fig. 5.—*A*, lateral cells; *B*, Stilling's cells; *C*, middle cells; *D*, scattered cells; *E*, lateral cells; *F*, accessory; *G*, anterior group for the back muscles; *H*, anterior motor cells; *I*, accessory; *J*, Stilling's cells.

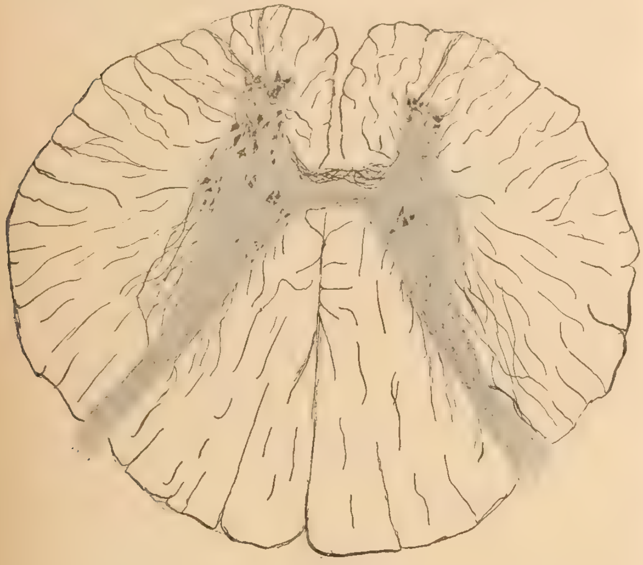

Fig. 6.

Sections made from the fourth cervical segment show very marked changes (Fig. 8). The anterior horn of the right side presents striking shrinking in outline and marked deficiency in ganglionic cells. It is at the lower level of this segment, it will be remembered, that the prominent lateral groups constituting the upper extremity of this nucleus begin to present themselves in the normal cord, and it is to be seen distinctly at this level on the left side (Fig. 8). On the right side, however, all that can be seen is the nucleus for the back muscles and the accessorius nucleus. The median group, the lateral and the scattered cells are all quite absent, excepting here and there in different sections a few scattered cells show themselves. Lower down in this segment the accessorius nucleus is scarcely to be observed, and the nucleus for the back muscles with a few anterior motor cells are all that are to be seen.

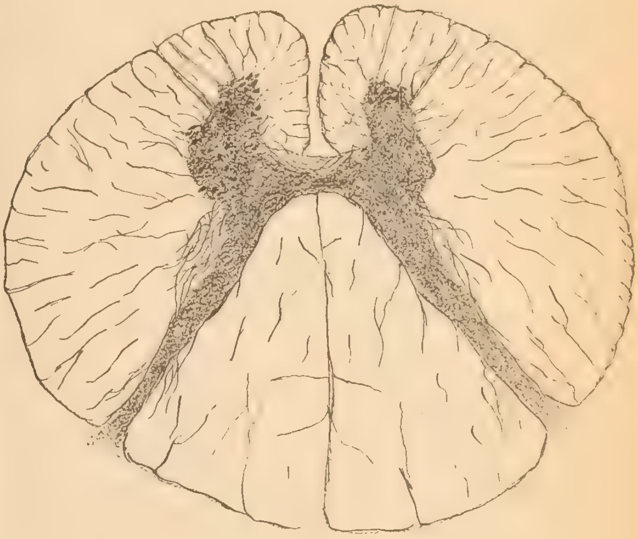

Fig. 7.

Sections made from the fifth cervical segment (Fig. 10) show the difference in the number of cells in the two anterior cornua very strikingly. On the left side the nuclei are prominent, especially the upper-extremity nucleus. On the right side this nucleus, with the exception of one or two cells situated where the anterior group of this nucleus is found normally, is quite wanting. The nucleus for the

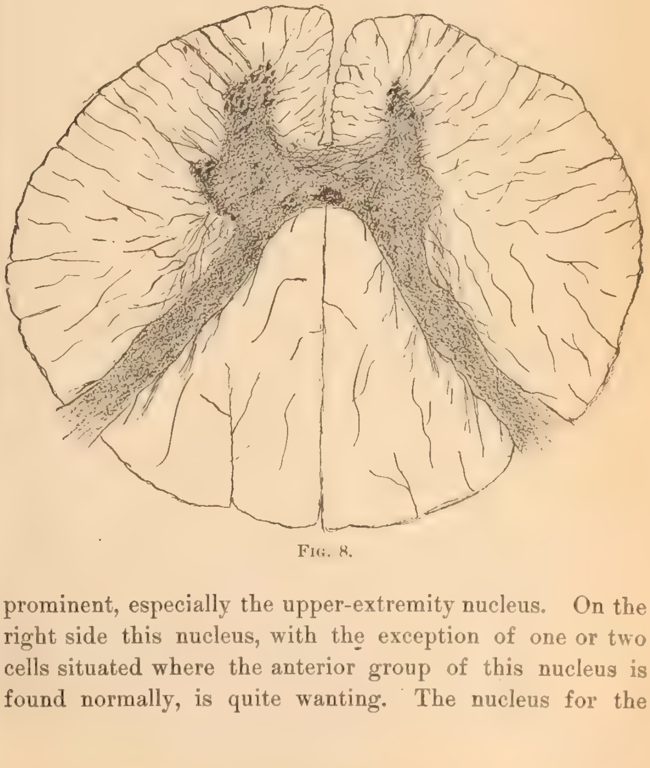

Fig. 8.

back muscles and the phrenic nucleus are conspicuously present, especially the latter, which at this level presents a perfectly normal appearance.

Passing from the fifth to the sixth cervical segment, we notice (Fig. 11) a marked shrinking in the contour and outline of the anterior horn on the right side. The cells on this side are small in number, and those present are remarkably small in size, their protoplasmic prolongation stunted or very delicate, and their nuclei not very well marked. The accessorius nucleus, which has been intact on this side until the present level is reached, now disappears. The nucleus for the back muscles still shows prominently.

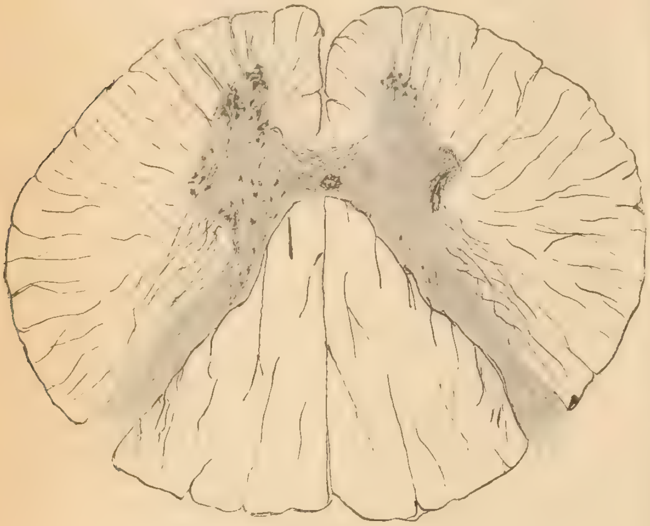

Fig. 9.

When the lower level of the sixth cervical segment is reached—that is, at its junction with the seventh (Fig. 12)—there is a very important change to be noticed on the affected side. In the first place, we notice that the cornu does not present such a shrunken appearance as formerly, although its contour is not yet normal as compared with its fellow. Secondly, and more important, is the presence of a group of cells which heretofore has not been evident. These cells are situated internally near the center of the gray matter; in fact, in the location normally occupied by the internal group of the upper-arm nucleus. The cells seen are few in number and have a shrunken and stunted appearance. In several of the serial sections they can scarcely be made out, and in none do they present a normal appearance. As we pass into the seventh segment they become less clearly evident. When the seventh segment is reached another important change is to be seen (Fig. 13). On the left or unaffected side the gray matter is normal in outline and the cell arrangement corresponds clearly with what is considered normal. On the right side the outline of the gray matter is shrunken. The cells of the back-muscles nucleus are to be seen very clearly. The group of cells that was seen in the segment above, and which, as was stated, occupied the place of the internal group of the upper-extremity nucleus, has at this level practically disappeared. In a few sections made from the upper part of the seventh segment a cell or two can be seen that belong evidently to this group, but lower down in the segment they are absolutely absent. The important change to be noted at this level is the appearance of a few cells at the lateral periphery externally. When the cells are first detected in this location they are small and insignificant-looking and few in number. As we descend, however, they assume a more important bearing, and when the eighth segment is reached we see (Fig. 14) this group very prominently brought into view. From its location we are led to

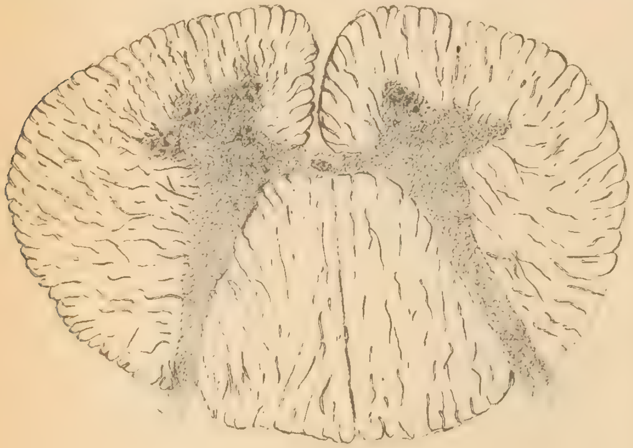

Fig. 10.

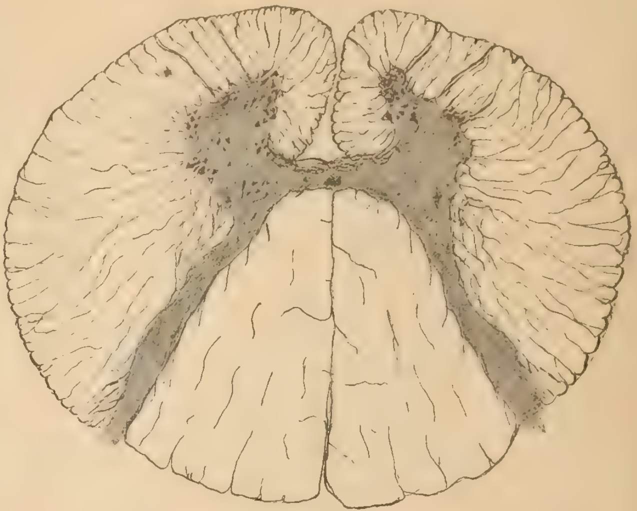

Fig. 11.

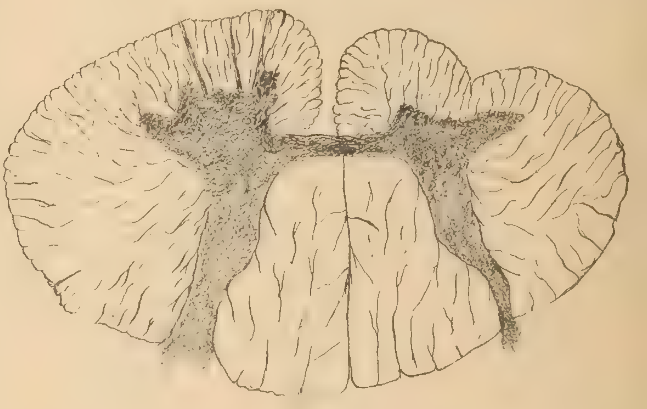

Fig. 12.

believe that it is the anterior group of the upper-extremity nucleus. It continues into the first dorsal segment. The cells of this group present less of the shrunken, atrophied appearance than any of the other cells that have been found in the lateral gray matter on this side. Just at the level of the eighth cervical their protoplasmic prolongations are really quite well marked. As regards the other cells at this level, what has been said in reference to the appearance of the seventh cervical segment applies as well to this. It is noteworthy that the cornua at the level of the first dorsal segment are nearly quite alike in outline.

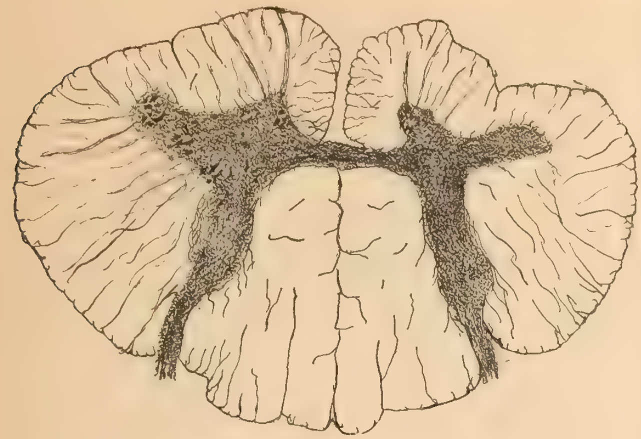
Fig. 13.

Before closing what is to be said regarding the changes found in this cord it is well to recall the more important data that have been indicated. To recapitulate, then, briefly, the changes found in the cells of the cervical portion of this cord were as follows :

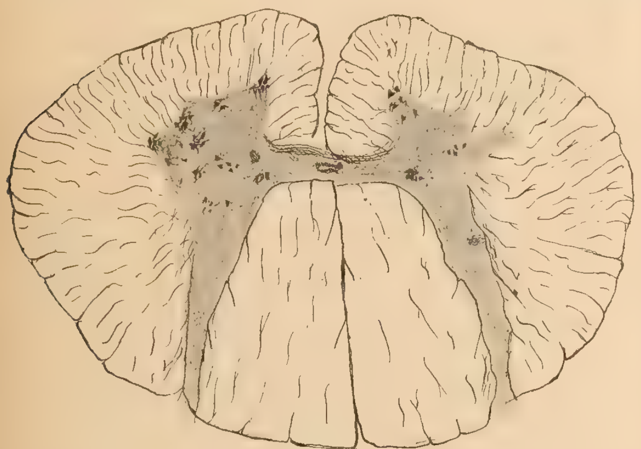
Fig. 14.

1. The group of cells situated toward the apex of the anterior cornua internally, and which is generally believed to give origin to the nerves that innervate the muscles of the back was intact on both sides.

2. The accessorius nucleus on both sides was apparently normal.

3. Stilling's cells presented themselves with sufficient frequency to be considered normal on both sides.

4. The medial group of ganglionic cells ordinarily observed at the upper portion of the fourth cervical segment and extending to the sixth was present on the left side. On the right the posterior portion was well represented throughout its entire extent. The anterior portion of the group did not always show so clearly.

5. The most striking change was to be seen in the groups of cells known as the upper-extremity nucleus, ordinarily called the lateral groups. This nucleus of cells, which was very well marked on the left side and presenting in three portions, was nearly absent on the right. At the level of the lower margin of the sixth and in the seventh segments a few cells were found in the position ordinarily occupied by the internal group, while at the level of the eighth and first dorsal a comparatively large number of cells was found in the position occupied by the anterior group of the upper-extremity nucleus.

It remains for us to consider the pathological findings in this case in relation to the movements of the upper extremity that the patient was capable of. It will be remembered that the only movement that the patient had in the right extremity was slight flexion and extension of the fingers; that pronation and supination of the hand, flexion and extension and rotation of the forearm, were impossible. On the other hand, he was a strong, vigorous man, working at ordinary labor that could be accomplished with one hand, and this suffices to show, without further emphasis, that the muscles of the neck, back, abdomen, legs, and the respiratory muscles were of good nutrition and properly innervated. It is therefore in entire keeping with this statement that the nuclei for the back muscles, the neck muscles, the diaphragm, and the muscles of respiration were found on the right side as well as on the left. The fact that a column of cells extending uninterruptedly in the same relative position throughout the cervical portion of the cord, and that the muscles which it is said to innervate were normal, tends strongly to corroborate the opinion that the group of cells in question, situated in the interior interno-lateral portion of the anterior cornu, is the nucleus of origin for the nerves supplying the muscles of the back, and is therefore properly termed the "nucleus for the back muscles." When we consider that the muscles supplied by the brachial plexus were almost entirely paralyzed on the right side, it is quite in keeping that the ganglionic cells furnishing the origin of the brachial plexus on this side should be extremely atrophied or absent. In

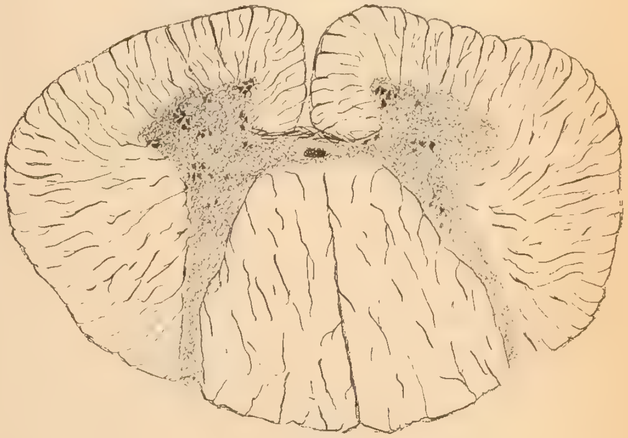
Fig. 15.

this case they were mostly absent, except here and there a scattered cell found in some of the serial sections. That the patient was capable of making some slight movements of flexion and extension of the fingers pointed to the fact that there were remaining some cells in the cord from which the nerves of the brachial plexus arose that were still functionating to a limited extent. It will be remembered that certain cells were found in the seventh and eighth cervical and in the first dorsal. It will likewise be remembered that these cells were found in relatively two different positions—one internally and one at the periphery. It is quite probable that one set of these cells caused the flexion of the fingers and the other the extension. It is desirable to know which did which. In order to determine this it is necessary to consider somewhat in detail the anatomy of the brachial plexus and the deep origin of its roots according to the best investigations. Before doing this, I desire to call attention to the corroborative evidence that the pathological findings in this case give to the statement which is considered a fact—that the lateral group of cells in the gray matter are concerned in giving origin to the nerves entering into the formation of the brachial plexus; that this nucleus begins in the lower part of the fourth cervical segment and extends into the first dorsal segment; and that the name of upper-extremity nucleus is so apropos that, for the sake of clearness, it should be adopted.

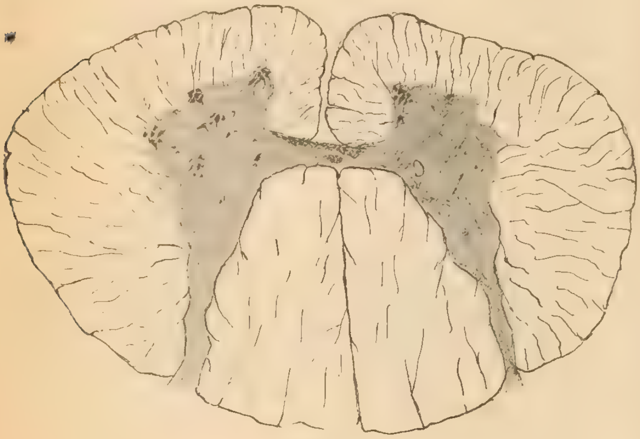

Fig. 16.

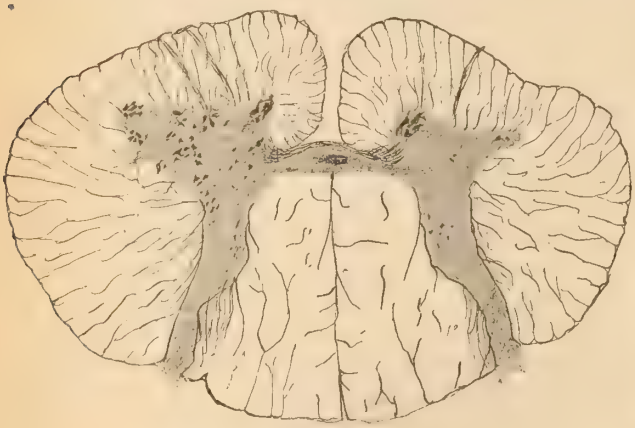

Fig. 17.

A reference to the accompanying drawing of the brachial plexus, which was designed by Walsh (Fig. 15) and based on a personal dissection of the brachial plexus in three hundred and fifty subjects, demonstrates that the greater part of the outer strand of the median nerve is formed from the anterior branch of the fifth and sixth uniting with the superior branch of the seventh. The inner strand of the median is formed largely from the eighth, with small branches from the seventh cervical and first dorsal, while the musculo-spiral, the nerve that innervates the extensors of the hand and forearm, arises from the fifth,

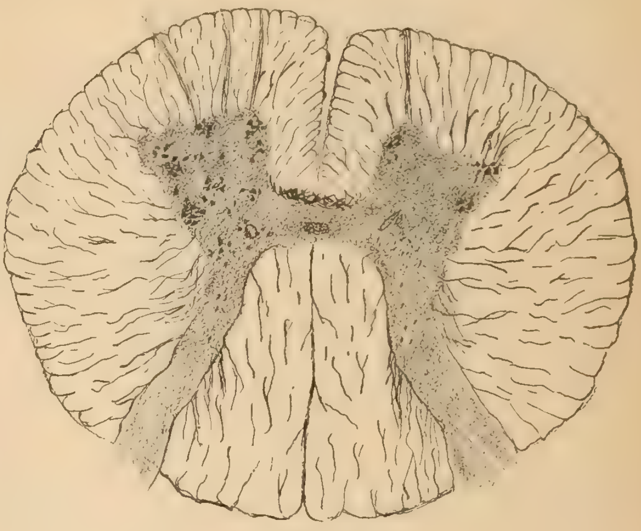

Fig. 18.

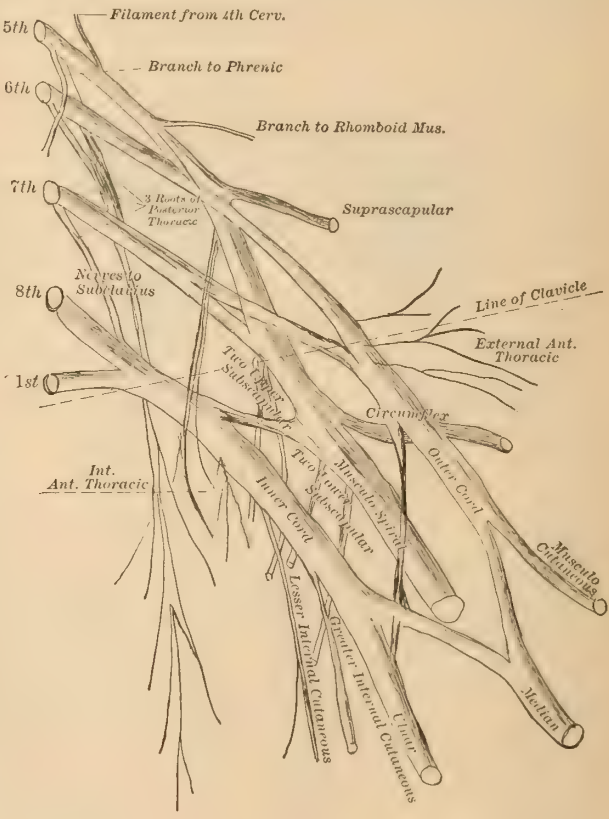

Fig. 19.

sixth, seventh, and eighth, the sixth supplying the least and the seventh the most. The ulnar, it will be seen, has its origin from the eighth cervical and the first dorsal.

A diagram made by Forgue and Lannengrace and modified by Thorburn, Ferrier, and Yeo, represents the segments of the cord wherein are situated the nuclei of ganglionic cells for the different muscles supplied by the brachial plexus.

It will be seen that the flexors of the fingers and the muscles on the anterior surface of the hand in general are supplied by the nerves originating in the last cervical and first dorsal segments. Possibly a very small amount of nerve supply may come from the seventh segment to supply the flexor carpi ulnaris. The nuclei of ganglionic cells in the seventh segment, and less so in the eighth, supply the extensor muscles of the back of the forearm, and therefore the extensors of the fingers and hand. It will be recalled that in the case described the cells of the upper-extremity nucleus that were present were at the seventh cervical segment, and to a slight extent above and below this level were arranged internally. Now, knowing as we do that the extensor muscles of the fingers have their origin at this level, it is justifiable to conclude that these cells found in this place were responsible for the ability to extend the fingers that this patient was possessed of. On the other hand, it will be seen by reference to the drawing (Fig. 14) that sections between the last cervical and first dorsal show a group of cells laterally; and again, the nuclei situated at these levels we suppose to be concerned in supplying the muscles that cause flexion of the fingers. Their presence in this case, and likewise the ability to flex the fingers having persisted, would point to the fact that our ideas concerning the functions of this group have not been amiss.

Thorburn, from an extremely careful clinical study, has reached conclusions concerning the location of muscle nuclei in the cervical cord that differ somewhat from those obtained from simple anatomical investigation, such as those of Herrington. Thorburn gives his results as follows:

Supraspinatus	Fourth cervical segment.
Teres minor	
Biceps	Fifth cervical segment.
Brachialis anticus	
Deltoid	
Supinator longus	
Supinator brevis	
Subscapularis	Sixth cervical segment.
Pronators	
Teres major	
Latissimus dorsi	
Pectoralis major	
Triceps	
Serratus magnus	
Extensors of wrist	Seventh cervical segment.
Flexors of wrist	Eighth cervical segment.
Interossei	First dorsal.
Intrinsic muscles	

Comparing these statements of Thorburn with the results heretofore set forth, it will be seen that our statements coincide very nearly with the results obtained clinically.

In our case there was a complete absence of cells of the upper-extremity nucleus until the lower portion of the sixth cervical segment was reached. A glance at the table, taken from Thorburn, shows that the sixth cervical segment innervates some of the chest muscles, such as the pectoralis major and serratus magnus, as well as the subscapularis, pronators, teres major, latissimus dorsi, and triceps. If this be a fact, these chest muscles must be supplied by the group of cells found internally at the level of the sixth cervical segment (see Fig. 12), for the other muscles just enumerated, with the exception of the latissimus dorsi, were paralyzed in our case. The important muscles supplied by nerves arising from the fifth cervical segment—such as the biceps, brachialis anticus, deltoid, and supinator longus and brevis—were entirely paralyzed. Correspondingly there was a complete absence of cells of the upper-extremity nucleus at this level. The same may be said of the fourth segment.

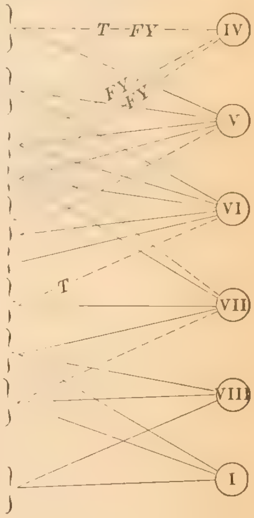

Fig. 20.

There have been a number of cases—some of chronic anterior poliomyelitis, some of intra-uterine amputation and congenital absence of a limb, and others of atrophy of certain individual muscles—carefully reported which, when the findings are analyzed and compared, tend to localize (rather indefinitely, some of them) the function of the cells of the upper-extremity nucleus in the different segments of the cord.

Monakow has reported a case in which there had been long-standing paralysis of the extensors of the hand and fingers. Examination of the spinal cord showed atrophy of the internal group of cells of the upper-extremity nucleus in the lower part of the sixth and seventh cervical segments.

In a case reported by Prevost and David, in which there had been atrophy of the thenar eminence, a lesion was found in the eighth cervical segment and very slightly above this level, involving principally the internal group of the upper-extremity nucleus, although the anterior group was affected to a slight extent.

Edinger has reported a case of congenital absence of the left hand and the larger portion of the left forearm, only a stump the size of a child's fist being attached to a normal elbow. The patient had always been a strong, hearty man, and died at the age of fifty-two years from valvular disease of the heart. The cord in the upper cervical portion was quite alike in its two halves. On section, the atrophied state of the gray matter could be seen with the naked eye in the sixth and seventh cervical segments on the left side. A more careful examination showed the left anterior horn to be atrophied from the lower level of the fourth segment to the first dorsal, the greatest atrophy being apparent between the exit of the sixth and seventh nerves. The cells of the upper-extremity nucleus in the affected area showed a remarkable falling off in number. The other cell groups were also affected, insomuch as their cells were atrophied and appeared like Deiters's cells. The ulnar, median, and radial nerves in Edinger's case were greatly atrophied, and the author gives it as his opinion that the atrophied portion of the cord contains the nuclei of origin for these nerves. He does not commit himself regarding the functions of individual groups.

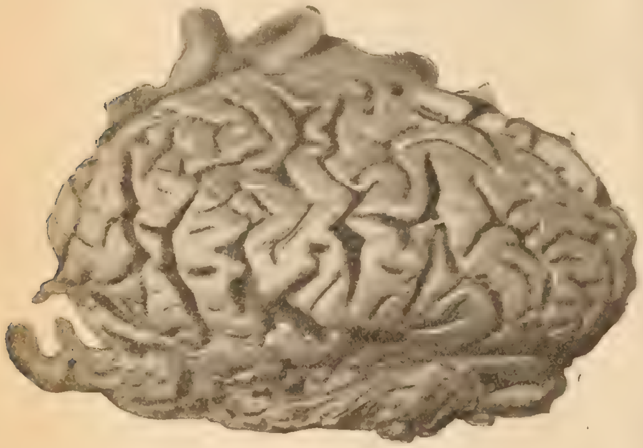

FIG. 21.—Right cerebral hemisphere.

Hayem has reported a case of atrophy of the cervical cord secondary to an amputation of the right forearm. The patient died seven years after the operation, and the atrophied area in the cord was principally in the seventh and eighth cervical segments and the first dorsal. It is not possible to say from the report just what groups of cells were atrophied, but the anterior and median groups of the upper extremity nucleus suffered most severely. Other cases have been reported by Kahler and Pick, Ross, Troisier, Serres, Tiedemann, Gurlt, and others, but the conclusions to be drawn from them do not differ materially from those stated.

Ferrier has published some very interesting inferences drawn from experiments made by himself and Yeo on monkeys. Although his conclusions can not be accurately applied, so far as the construction of the brachial plexus in man is concerned, still they are quite in keeping with the knowledge that has been obtained in man by other methods. Ferrier found that, in stimulating the anterior root fibers entering the formation of the brachial plexus with the faradaic current, the following were his results:

Fourth Cervical.—Deltoid, supraspinatus and infraspinatus, teres minor, triceps, brachialis anticus, supinator longus, extensors of wrist and fingers, diaphragm.

Fifth Cervical.—Deltoid (clavicular portion), biceps, brachialis anticus, serratus magnus, supinator longus, extensors of wrist and fingers.

Sixth Cervical.—Latissimus dorsi, pectoralis major, serratus magnus, pronator (flexor of wrist), triceps.

Seventh Cervical.—Teres major, latissimus dorsi, subscapularis, pectoralis major, flexors of wrist and fingers (median), triceps.

Eighth Cervical.—Long flexors, ulnar flexors of wrist, intrinsic muscles of hand, extensors of wrist, phalanges, long head of triceps.

First Dorsal.—Intrinsic muscles of hand.

In fact, all the evidence that we may collect seems to corroborate the statements that we have already made concerning the relative position of nuclei in the upper-extremity group for the different muscles of the upper extremity.

It remains for us to say a word concerning the generalizations that may be made from our present knowledge of cell grouping in the cervical cord.

We have already stated that the most constant cell group in the spinal cord is the one situated anteriorly, near the apex of the anterior cornu internally, and that its function is to supply the muscles of the back—*i. e.*, extensor muscles. Again, it has been stated that the group of cells found in the seventh cervical segment were internally in the gray matter, and that they were concerned in giving the nerve supply to the muscles that caused extension of the fingers. Considering, then, the functions of these groups to be as stated, I would suggest that the nearer a ganglionic cell group is to the median line the more apt it is to represent the origin of extensor muscles. The more distant it is, the more apt is it to represent the flexor muscles. I am aware that this statement concerning the relative position of the cell groups indicating whether they are for the flexors or the extensors is at variance with the statements of some previous writers (Spitzka); but it seems to me that the conclusions drawn are justifiable. Therefore, in cases of injury where the extensor muscles show the greatest amount of paralysis, it may be concluded that the injury to the cord is more deeply situated than if the flexors were the most paralyzed, and *vice versa*. The same may be said of disease of the cord.

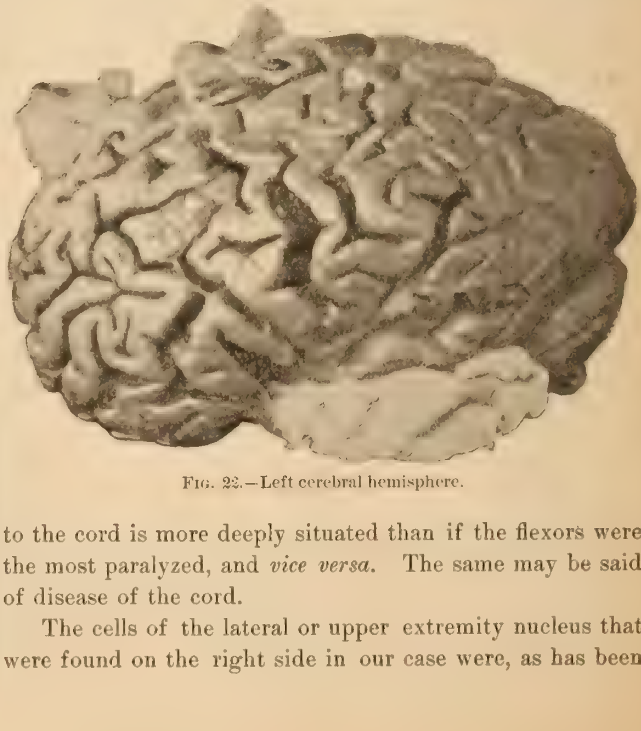

FIG. 22.—Left cerebral hemisphere.

The cells of the lateral or upper extremity nucleus that were found on the right side in our case were, as has been said, few in number, and those found were small, with very weak and delicately-appearing protoplasmic processes, and less well marked angular or polygonal appearance than the cells of corresponding groups of the other side of the cord. This is due to the functional inactivity of the parts which they supplied, for, although there was slight ability to flex and extend the fingers, the extremity practically was motionless, and therefore the cells functionated very slightly. It has recently been shown that ganglionic cells, when they remain inactive for a great length of time, soon take on a similar appearance to cells that have been greatly overworked, and this appearance corresponds very closely to what has been stated as the appearance of the cells in the diseased portion of this cord.

It has been stated many times, and evidence has been brought forward to support such statements, that the cortical areas, in which are situated the functions of motion, often atrophy as the result of long-continued disuse of an extremity (Edinger's case). This specimen gives corroborative evidence in that line. It is unnecessary for me to say that the motorial areas on the external surface of the brain are situated mainly on either side of the fissure of Rolando—that is, in the ascending frontal and ascending parietal convolutions. It is known also that the area for the arm and wrist are situated in the ascending frontal convolution about midway between the longitudinal fissure and the horizontal limb of the fissure of Sylvius. The shoulder center is just above this, but in both convolutions—the ascending frontal and ascending parietal—while the center for the fingers and thumb is just below it. Now, if there is a manifestation of atrophy in the external surface of the brain in this specimen, it should involve these three centers on the left side—the side opposite the one in which the disease showed itself in the spinal cord.

That as accurate information might be obtained as possible, the brain was carefully suspended in Müller's fluid for a few days until its consistence became such that the pia could be carefully removed; the brain was then photographed. Examination of the accompanying photographs (Figs. 17 and 18) will show that the convolutions on either side of the fissure of Rolando of the left hemisphere are considerably narrower than those of the right, except near the longitudinal fissure. In order that the size of the convolutions might be compared readily, the fissure of Rolando on each side was mathematically divided into tenths, and then the diameter of the convolutions measured at each of these points.

On the right side the measurements, numbered from above downward, were as follows:

Right ascending frontal.	Level.	Right ascending parietal.
Millimetres.		Millimetres.
16	I.	7
12	II.	14
12	III.	12
11	IV.	14
11	V.	7
11	VI.	14
6	VII.	15
7	VIII.	6
12	IX.	9
9	X.	12

On the left hemisphere the measurements gave—

Left ascending frontal.	Level.	Left ascending parietal.
Millimetres.		Millimetres.
17	I.	10
20	II.	20
18	III.	17
13	IV.	13
11	V.	8
13	VI.	8
9	VII.	7
10	VIII.	12
14	IX.	13
8	X.	11

The depth of the fissure of Rolando at ten different levels was obtained in two ways, and the results obtained were averaged. The average is here given. In the first way a slender bit of wood with a blunt end was passed down to the bottom of the fissure of Rolando and then measured at the point where it came on a level with the cortex cerebri, great care being taken that it did not enter the substance of the brain. By the second method the fissure was carefully increased in size by spreading the convolutions, and then a piece of tin foil was forced to the bottom of the fissure and the measurements were then taken. They indicated on each side as follows:

Left fissure of Rolando.	Level.	Right fissure of Rolando.
Millimetres.		Millimetres.
14	I.	10
15	II.	13
10	III.	12
11	IV.	14
10	V.	11
8	VI.	10
9	VII.	10
11	VIII.	12
7	IX.	6
10	X.	4

Too much stress should not be laid on the significance of these measurements. The fact that the convolutions of the brain vary very extensively in size and somewhat so in conformation is well known. The same may be said for the fissuration of the brain. Still it may be said that great pains were taken to get these measurements accurately on both sides; and as they show a shrinkage in the size of the convolutions and the depth of the fissure of Rolando of the left side, particularly in the upper extremity area, it is not amiss to refer to it.

A reference to the tables shows that on the left side at the fifth, sixth, and seventh levels the parietal convolution was very narrow as compared with the parietal convolution on the opposite side. The left ascending frontal convolution is also smaller at these levels than its fellow of the opposite side of the brain. The fissure of Rolando likewise is shallower at these and lower levels.

After the measurements were taken the motorial areas were sectioned at the ten levels along the fissure of Rolando indicated above, and two pieces removed from each section, which, after proper hardening, were stained, the one with carminate of sodium, the other with hæmatoxylin. The thickness of the cortex cerebri was about the same in sections taken from either side of the brain, and this thickness varied, as it does normally, the sections made from the apices of the convolutions presenting the deepest cortex. In the sections stained by the Weigert method it can not be said that there were any findings that could be considered as abnormal. The layer of connective tissue beneath the pia was thin and normal in appearance, as were the medullated fibers beneath this layer. The network of fibers in the layer of the small pyramids presented as close and well-formed arrangement on the left side as on the right. And the same can be said of the fiber network below the external stripe of Baillarger. In fact, with the hæmatoxylin stain it was impossible for a skillful microscopist to pick out which specimen came from the right motorial area and which from the left.

Sections stained by the carminate-of-sodium stain did, on the other hand, show a change which is worthy of attention. The cells of the third layer, or the giant pyramidal cells of Betz, seen in specimens taken from the left motorial area, were not so conspicuous as those seen in sections taken from the right side. Although the writer does not care to state that they were much lessened in number in any given section, it was noteworthy that in many of the sections, particularly those taken from the fourth, fifth, and sixth levels of the left motorial area, these cells were smaller in size and not so closely arranged in clusters as in sections made from the motorial area on the other side. Their protoplasmic prolongations seemed finer and less sturdy and the nuclei took on a deeper hue than the nuclei of the cells from the right motorial area.

It is believed by many physiologists that the layer of pyramidal cells, or, as it is often called, the ganglion-cell layer, is the location for the essential motor cells. This is the view that is strongly advocated by Ferris. If this view can be accepted—and it can at least as an extremely probable hypothesis—it is a very significant fact that in our case the cells of the motorial area governing the paralyzed arm should be found in a condition resembling atrophy.

In conclusion, I would advance the following statements, based upon the foregoing investigation:

1. The great majority of the motor cells of the cervical spinal cord have a certain definite arrangement.
2. Some of these cells are arranged in columns which extend through many segments of the cord.
3. Certain definite functions can be assigned to certain cell groups and succession of groups making up a cell column.
4. The cell groups giving origin to the brachial plexus are three in number, and they extend from the upper portion of the fourth cervical segment to the lower portion of the first dorsal. The cells of the upper portion of this area supply the muscles of the shoulder and upper arm. The cells of the lower portion supply the forearm and hand. The nucleus for the flexors is externally and at a lower level than that of the extensors.
5. The cells giving origin to nerves that innervate extensor muscles are situated nearer the median line than those supplying flexor muscles.
6. The group of cells innervating the back muscles is situated ventrad and internally in the anterior cornua.
7. The motorial function of any part or extremity is in direct relation to the number and health of the ganglionic cells in that segment of the cord from which the nerve going to said part originates.
8. In cases of long-standing disuse and disability of an extremity there occurs in the opposite side of the brain in the location corresponding to the cortical area for said extremity an atrophy both in the size and constituents of that area.

Appended is a list of the articles arranged alphabetically that have been consulted for the preparation of this article:

Birge. *Archiv für Anat. u. Phys.*, physiol. Abt., 1892.
Bechterew. *Archiv für Anat.*, 1887.
Bernheim. *Rev. de méd.*, January, 1893.
Ramon y Cajal. *Anat. Anzeig.*, 1890, Nos. 21 and 22. *Nuevas observ. e. l. estructura de la medulla espinal de los mamiferos*, 1890.
Charcot and Joffroy. *Archives de physiol. norm et path.*, vol. iii, p. 134, 1868.
Collins. *Medical Record*, October 10, 1891.
Cornil. *Compt. rend. de la Soc. de biologie*, p. 187, 1863.
Dees. *Allgem. Zeitschr. für Psychiat. u. physiol. gerichtl. Medicin*, vol. xliii, 1887.
Darkschewitsch. *Archives de neurologie*, July, 1892.
Dejerine and Major. *Bull. de la Soc. de biol.*, 1878.
Dickinson. *Journ. of Anat. and Phys.*, 1868.
Drummond. *Brain*, April, 1885.
Edinger. Virchow's *Archiv*, 1882, vol. lxxxix.
Ferrier. *Brain*, vol. iv, 1882.
Ferrier and Yeo. *Proc. Roy. Soc.*, No. ccxii. *Ctrlbl. für Nervenheilk.*, 1881, No. 9.
Forgue and Lannengrace. *Compt. rend.*, vol. xcviii, 1884.
Freeman. *Journ. of Anat. and Phys.*, 1886, vol. xx.
Friedlander and Krause. *Fortschr. d. Med.*, 1886, No. 23.
Genzmer. Virchow's *Archiv*, 1876, vol. lxvi.
Gudden. *Archiv für Psychiat.*, vol. ii, p. 693.
Gurlt. *Lehrbuch der path. Anat. der Haussäugethiere.*
Hayem. *Bull. de la Soc. anat.*, 1875, p. 684; 1876, p. 230.
Hayem and Gilbert. *Archives de physiol.*, vol. iii, 1884.
Herrington. *Proc. Roy. Soc.*, No. ccxliii, 1886.
His. *Abhandl. d. math.-phys. Classe d. königl. sachs. Gesellsch. d. Wissensch.*, vol. xiii, 1887.
Kahan. Ref. in *Ctrlbl. für Nervenheilk.*, vol. v, 1882.
Kahler and Pick. *Archiv für Psychiat.*, vol. x, 1880.
Kaiser. *Die Functionen des Ganglienzellen des Halsmarkes*, Haag, 1891.
Kolliker. *Anat. Anzeiger*, 1891, Nos. 14 and 15. *Zeitschr. für wissensch. Zoologie*, vols. xlix and li.
Krause. *Anat. des Kaninchens*, Leipsic, 1868. *Handbook*, Leipsic, 1865.
Macewen. *Brit. Med. Journal*, April 5, 1890.
Mayser. *Archiv für Psychiat.*, vol. vii, 1887.
Monakow. *Archiv für Psychiat.*, vol. x, p. 523.
Money. *Trans. Path. Soc. London*, 1884.
Mott. *Journ. of Anat. and Phys.*, vol. xxii, 1868.
Oppenheim. *Ctrlbl. für Nervenheilk. u. Psych.*, August, 1891.
Nonne. *Deutsch. Zeitschr. für Nervenheilk.*, vol. i, 1891.
Peyer. *Zeitschr. fur rationelle Med.*, New Series, vol. iv, 1854.
Prevost and David. *Archives de physiol.*, 2d series, vol. i, 1874.
Redlich. *Ctrlbl. für Nervenheilk. u. Psychiat.*, January, 1893.
Ross. *Diseases of the Nervous System*, London, 1881.
Sahl. *Deutsch. Archiv für klin. Med.*, vol. xxxiii, 1883.

Van Sass. Virchow's *Archiv*, vol. cxvi, 1882.

Serres. *Anat. comp. de cerveau*, 1824–'26.

Starr. *Amer. Journ. of Neurol. and Psych.*, 1884.

Spitzka. *Journ. of Nerv. and Mental Dis.*, p. 210, 1880.

Takacs. *Jubilar Arbeiten als Festgabe an Prof. Kromyi*, 1891.

Tiedemann. *Zeitschr. für Physiol.*, 1829.

Thorburn. *Diseases and Injuries of the Spinal Cord.*

Troisier. *Archives de Phys.*, vol. iv, 1871–'72.

Turner. *Journ. of Anat. and Physiol.*, vols. xxv and xxvi.

Vulpian. *Bull. de l'Acad. des sciences*, 1872. *Archives de phys.*, vol. ii, 1869.

Waldeyer. *Abhandl. d. königl. preuss. Akad. d. Wissensch. zu Berlin*, 1888.

Walsh. *Amer. Journ. of the Med. Sciences*, October, 1877.

NOTES ON TWO HUNDRED AND FIFTY CASES OF EPILEPSY.

By R. K. MACALESTER, M. D. (Zurich).

Ætiology and Symptoms.

This report is based upon the histories of two hundred and fifty cases of epilepsy, treated in Professor C. L. Dana's clinic at the New York Post-graduate Medical School and in his private practice, and presents briefly the following notes concerning this familiar affection. These cases represent, therefore, all classes of society, being gathered from the two aforesaid sources. The main object in view is to compare the ages of patients, especially at the time of onset, with those recorded by some other writers.

Age.—Divided into decades, the ages of patients applying for treatment range as follows: First decade, forty-five; second, seventy-six; third, sixty; fourth, forty-five; above forty years, twenty-four. The second decade, it will be observed, shows much the largest proportion of cases, and the third about a fifth less. The first and fourth decades show an equal number of cases, while after the latter period there are relatively few.

Nativity.—The nativity of *patients:* Born in the United States, a hundred and sixty-four; Germany, twenty-six; Ireland, seventeen; England and Scotland, eight; Italy, seven; Canada, six; Austria-Hungary, five; Scandinavia, four; Russia, four; other countries, nine.

Of a hundred and one patients born in the United States, the nativity of the *parents* has been recorded in our histories as follows: Born in the United States, eighty-seven; Germany, forty-five; Ireland, thirty-one; England and Scotland, twenty-one; Russia, eight; Canada, three; Switzerland, three; France, two; Italy, two.

Causes.—It is usually customary to divide the causes of epilepsy into two classes—the predisposing and the exciting; but, as several of the causative factors may belong to both of these divisions—as, for instance, infantile convulsions, chorea, excesses, etc.—I do not think it advisable to make this distinction in the following:

Heredity.—Investigations as to the neuropathic family taint have been made in a hundred and sixty-nine of our histories, and it has been noted in fifty-two cases, or thirty and four fifths per cent.

The observations of some other writers may serve as a comparison: Echeverria, twenty-eight per cent.; Gowers, thirty-six per cent.; Putzel, twenty-three per cent.; Reynolds, thirty-one per cent.

An hereditary neuropathic influence on paternal or maternal side, direct or otherwise, has been recorded as follows: On paternal side (in father), epilepsy in seven, and other neurotic and mental affections in six cases. On maternal side (in mother), epilepsy in two, and other neurotic and mental affections in fourteen cases. In other antecedents (father's and mother's family), epilepsy in sixteen, and other neurotic and mental diseases in twelve cases. A further manifestation of a neuropathic predisposition is the existence of some neurotic disease in the brothers and sisters of those affected. For instance, in fourteen of our cases the brothers or sisters were affected with epileptic attacks, while in ten others they suffered from some other neurotic disease, such as infantile convulsions, chorea, migraine, etc., and insanity.

Among other predisposing and exciting causes the following may be enumerated in the order of their frequency:

Excesses.—In forty-four cases: Alcoholism (with or without the inordinate use of tobacco) in parents, ten; in patients themselves, fourteen cases; excessive smoking alone, in two cases; sexual excesses, in nine cases; physical and mental strain (overwork, worry, anxiety, excitement, etc.), in nine cases.

Infantile Convulsions.—In twenty-seven cases.

Traumatism, with symptoms of genuine epilepsy following and persisting, in twenty-four cases—viz., injuries to head and body in twenty-three cases, and to peripheral nerves in one case.

Phthisis.—In parents, in seventeen; in patients themselves, in three cases.

Acute Febrile Diseases (measles, scarlet fever, typhoid fever, pneumonia, etc.).—In seventeen cases.

Infantile Hemiplegia.—In sixteen cases.

Fright and Shock.—In eleven cases.

Birth (long, hard labor, instruments used, etc.).—In ten cases.

Gastro-intestinal Affections.—In four cases.

Exposure to High Temperature (sun or furnace).—In four cases.

Chorea.—In three cases.

Syphilis.—Congenital in one; acquired in two cases.

Pregnancy.—In two, and abortion in one case.

Menopause.—In three cases.

Rhachitis.—In two cases.

Vaccination Poisoning.—In one case.

Bad Food (?).—In one case.

The following have also been frequently recorded as preceding or associated with the onset of the disease—viz., menstruation, marriage, masturbation, and mental depression.

Thus we find a large number of ætiological factors noted in our records—viz., two hundred and forty-five. But, notwithstanding this, no cause, either predisposing or exciting, could be ascertained in nearly half of the cases. The large number of causes above enumerated is explained by the fact that frequently two or more of them have been noted in connection with the same case, as, for instance, heredity as predisposing and injury as exciting cause, or heredity and infantile convulsions as predisposing and injury as exciting cause.

It is not my intention to discuss the causes of epilepsy in detail. Only, *en passant*, I should like to emphasize what a prominent place excesses occupy among the ætiological data noted in our records.

Sex.—Our records show a hundred and thirty-eight males to be affected to a hundred and twelve females—a marked preponderance of the male sex—which is in concord with the data given in statistics by Althaus, Celsus, Eulenburg (seventy-three males, fifty-nine females), Joseph Frank, Hamilton, Lauret, Putzel (seventy-five males, fifty-nine females), Reynolds (forty-nine males, thirty nine females), Sandros, and Webber (a hundred and two males, sixty females). The opposite ground has been taken by Beaumas, Esquirol, Gowers (who in 1,450 cases found the proportion of females to males to be about 6 to 5), and Moreau, who, by the same methods, prove the preponderance of the female sex, while Eichhorst, Hammond (two hundred and ninety-eight males, two hundred and seventy-four females), Nothnagel, Starr, and others consider the sexes to be nearly equally affected.

Age at Onset.—Noted in a hundred and ninety-seven cases, the onset occurred as follows: During first five years, in fifty-one cases, twenty-six per cent.; from five to ten years, in twenty-six cases, thirteen and a quarter per cent.—together, thirty-nine and a quarter per cent.; from ten to twenty years, in sixty-five cases, thirty-three per cent.; from twenty to forty years, in forty-eight cases, twenty four and a quarter per cent.; above forty years, in seven cases, three and a half per cent.

In regard to the fact, unanimously stated by the various authors, that about three quarters of the cases of epilepsy develop in the first twenty years of life, our records thoroughly agree, for we find seventy-two and a quarter per cent. during this period.

According to other writers, the decade from ten to twenty years is the period that marks the onset of by far the largest proportion of cases—viz., nearly a half or even more of the total number.

Thus, Gowers records forty-six per cent., Hamilton seventy one out of a hundred and ninety-three cases, Hammond three hundred and twenty-nine out of four hundred and seventy-two cases, Reynolds a hundred and six out of a hundred and fifty two cases. Webber is of the same opinion, while Nothnagel advocates the period of from seven to seventeen years. Our records show thirty-three per cent. as originating in the second, but *thirty-nine per cent. in the first decade* of life—the highest number in any one decade—which is quite at variance with the aforesaid writers, but in accordance with Starr, who gives, in a collection of a hundred and sixty-seven cases, fifty-one as beginning in the first and forty-six in the second decade.

It will be further observed that during the first five years of life a remarkably high percentage of cases developed—twenty-six per cent.—exactly double as many as in the following five years, which is a much higher ratio than that given by others. For instance, Gowers's proportion for these two periods is 241 to 181; Starr's, 29 to 22 cases.

In other respects our records only confirm the results of other statistics that go to prove that above the age of twenty fewer and fewer cases develop, and that after forty years the onset of the disease is of comparatively rare occurrence.

SYMPTOMATOLOGY.—*Aura.*—Aura has been recorded in only forty-two cases, although it has evidently been investigated in the majority of our histories. It is described as some general or special sensory disturbance, such as epigastric or abdominal aura, or unpleasant dizzy sensations, or dreamy, "starry" feeling, or flashes of light, sounds in the ears, sensations of breezes blowing, etc. Among the peculiar and rarer auræ were desire to go to stool, the fit coming on just as the patient starts, disagreeable odors, hemianopsia, etc.

Character of Attacks.—Noted in two hundred and twelve histories: *Haut mal* has been noted in eighty seven cases; mixed form in sixty-nine; *petit mal* in thirty-four; *haut mal* with Jacksonian epilepsy in fourteen; rotatory epilepsy in two; psychical epilepsy in six.

Frequency of Attacks.—Noted in a hundred and sixty-seven histories: One or two attacks monthly in forty-four cases; irregular and in groups in forty-one; one to more attacks daily in twenty-nine; one to two attacks weekly in twenty-eight; one to two attacks yearly in twenty-five.

Time of Attacks.—Noted in a hundred and twenty-six histories: Diurnal and nocturnal in fifty-nine cases; diurnal attacks only in forty-seven; nocturnal in twenty.

Mental Condition.—In thirty-six cases mental disturbances have been recorded, as weak or weakening or melancholic mental conditions, defective or poor memory, depression, etc. In ten cases, irritable, bad temper, or quarrelsome. In five cases, idiotic.

Stigmata.—In twenty-nine cases stigmata have been noted and described as: Defective development of head and body; badly shaped, large, or lobeless ears; projecting forehead; unequal pupils; high, arched palate; crowded, uneven, badly-developed teeth; curious-shaped or deformed head; asymmetry of face or head; prematurely closed or open fontanelles, etc.

Hemiplegia.—Infantile hemiplegia has already been mentioned among the "causes" as occurring in sixteen cases. This condition coexists with genuine, general epileptic attacks.

Transient hemiplegia, supervening upon epileptic attacks (the so-called post-epileptic hemiplegia), has been observed in six cases.

(*To be continued.*)

A Registry for Trained Nurses has been opened at the Presbyterian Hospital, corner of Madison Avenue and Seventieth Street. A prompt response is assured to those making application for nurses. There is no fee; only necessary messenger or telegraphic service will be charged for. The hospital has a telephone, which will be found a ready means of communication from any part of the city.

THE EYE TREATMENT OF EPILEPTICS.

A CRITICAL REVIEW OF
CERTAIN FACTORS THAT MAY LEAD TO CONVULSIVE SEIZURES,
AND THE TREATMENT OF EPILEPSY WITHOUT DRUGS.

BY AMBROSE L. RANNEY, A. M., M. D.

(*Continued from page 83.*)

CASE VII.—Mr. S., aged sixteen years, student.

Family History.—Many cases of phthisis have occurred in maternal ancestry. All of paternal ancestry are extremely nervous and excitable. The father is intemperate, extremely irascible, and often difficult to control; at times he has been considered partly insane. He has very marked eye defects.

A brother of the patient was an epileptic, partially idiotic, and an inmate of a school for the feeble-minded until he died.

History of the Case.—First examination made April 6, 1889. Patient has always suffered from an extremely weak stomach, and at intervals from peculiar attacks, supposed to be fainting attacks.

Eye Defects.—Under atropine 1·00 D. of hypermetropia was found.

While testing his eye muscles this patient complained of great distress in his stomach and was immediately seized with an epileptic attack in the office. He had had several such attacks (at varying intervals) while at a preparatory school.

At the third visit he showed the following tests: Adduction, 33°; abduction, 3°; sursumduction—right, 1°; left, 2°; esophoria, 5° to 10°; left hyperphoria, 1° to 2°. In accommodation he showed an exophoria of 4° and + 1·00 s. glasses were ordered for reading. Esophoria prisms (1° each) were given for constant wear.

At subsequent interviews it was found to be difficult to complete the muscular tests on account of distress in his head and stomach. He showed, however, an esophoria that fluctuated from 8° to 15°; adduction, 38°; abduction, 2°; sursumduction—right, 3°; left, 3°. Esophoria prisms (2° over each eye) were continued.

Treatment and Results.—A graduated tenotomy was performed during November, 1889, on each internal rectus, and his prisms were removed. Six months after the last tenotomy the patient showed: Adduction, 25°; abduction, 6°; sursumduction—right, 2°; left, 2°; no hyperphoria; esophoria, 0° to 2°.

In an interview with his mother about six months ago she stated that her son had not had a single epileptic attack to her knowledge since the operations on his eyes over two years and a half ago.

CASE VIII.—Mr. O., aged twenty-eight years, single, minister of the gospel. Referred to me by Dr. M. A. H. Hart, of Milton, N. H., on October 28, 1892.

Family History.—No epilepsy or allied diseases among his ancestry.

History of the Case.—The first paroxysm occurred while the patient was a student at the Andover Seminary after a hard evening's work at study. Altogether four typical epileptic attacks have occurred in addition to one or two of *petit mal. Three of these attacks have occurred during the past twelve months.* The last attack occurred while reading in a moving passenger car. Patient has taken bromides regularly during the past year, and was sent to me by his physician for the purpose of determining whether any reflex causes existed for the attacks. The patient appears to be in good physical health and wears the following glasses, given to him by Dr. Lewis Dixon, of Boston: O. D. — 2·50 s. ⌣ — 0·50 c., axis 180°; O. S. + 0·50 s. ⌣ + 1·00 c., axis 130°. No epileptic attack had ever occurred until these glasses were given for constant wear.

Eye Defects.—At the first examination the patient was found to have a *crossed diplopia of 15°*, with an apparent right hyperphoria of 2°. His abduction was 17°. Under atropine the following refractive condition was found: O. D., V. $\frac{15}{200}$, made $\frac{20}{20}$ by — 2·50 s. ⌣ — 0·50 c., axis 180°; O. S., V. $\frac{20}{40}$, — made $\frac{20}{20}$ by + 0·50 s. ⌣ + 0·50 c., axis 115°.

With this correction, the crossed diplopia was unconquerable when a red glass was placed before either eye. Without the red glass the following muscular tests were elicited: Adduction, 8°; abduction, 17°; sursumduction—right, 6°; left, 4°; right hyperphoria, 2°; exophoria, 16°.

Treatment and Results.—With such extreme heterophoria, it was deemed wise to perform a free graduated tenotomy at once upon the right external rectus. After the operation patient disclosed: Exophoria, 6°; right hyperphoria, 3°; abduction, 12°.

Subsequently a tenotomy for a right hyperphoria was performed, as the patient then disclosed 5° of right hyperphoria, with a sursumduction, right, of 8°; left, 1°+. Results after this operation: Right hyperphoria, 1°; exophoria, 5·5°; adduction, 23°; abduction, 14°.

It was decided later to operate on the left external rectus. Results after this operation: Right hyperphoria, 0·5°; exophoria, 3°; adduction, 27°; abduction, 9°; sursumduction—right, 5°; left, 4°. In accommodation, esophoria, 4°, with full refractive correction.

The patient now *shows no diplopia*, either vertical or lateral, with or without a red glass. Within the subsequent week the patient showed no hyperphoria; exophoria, 1°; adduction, 27°; abduction, 10°; sursumduction—right, 5°; left, 5°.

It was a great surprise to me and at the same time a source of much gratification that in so short a time (about one month) an approach to ocular equilibrium in this patient had apparently been attained. It was of course possible and perhaps probable that some latent heterophoria still existed, which might require further investigation and correction; but I deemed it wise at this time to instruct the patient to desist as far as possible from reading and study for a few months and to live an out-of-door life.

I recognized the fact that up to the time when glasses were first given him by Dr. Dixon, of Boston this patient had *practically been a monocular being*, using his left eye chiefly and discarding or suppressing the images in his myopic eye. As soon as his myopia was corrected in the right eye the patient unconsciously was forced to use the two eyes simultaneously, and his extreme heterophoria became an active factor in producing reflex nervous troubles. I was hopeful that after orthophoria was nearly established this patient might tolerate a full correction of his refraction; but I suggested to the patient at the last interview that it might be well for him to discard his distance glasses in case epileptic seizures should occur. I tried to impress upon him the gravity of his malady, the necessity of careful observation of the frequency of his attacks, the length of time required for the complete solution of such cases as his own, and, above all, the importance of abstaining from bromides during the investigation of his ocular problems.

It was a great surprise to me, therefore, when I received a letter from this patient in November, 1893, stating that he had abandoned the eye treatment and returned to bromides.

CASE IX.—Miss S., aged thirteen years. Referred to me by Dr. S. B. Casey, of Brooklyn, May 28, 1888.

Family History.—Mother is very nervous. One brother, aged fifteen years, is very defective mentally. One paternal aunt died of phthisis.

History of the Case.—Patient developed epilepsy at the age of ten. Prior to that age she had noticed visual disturbances of a peculiar kind. As she expresses it, "everything seemed to move downward." Had been an unusually bright child up to the time of the epileptic attacks.

For some months the attacks steadily increased in frequency until they averaged one a week. She was then put under bromides in various combinations.

In spite of the bromides and the extraction of five teeth, she continued to have two attacks a month, the two always following each other.

In April, 1888, at my suggestion, the experiment of discontinuing bromides for two weeks prior to the beginning of eye treatment was contemplated, but within twenty-four hours a condition of continuous epilepsy developed, which seemed to threaten the life of the patient. It was found necessary at once to resume the bromides in large doses. A letter from the physician, dated May 5, 1888, says: "I must say freely that I am unable to promise more in this case than to modify the frequency and severity of the attacks."

Eye Defects.—On May 25, 1888, the patient showed: Right hyperphoria, 0·75°; esophoria, 4° to 10°; adduction, 15°; abduction, 3°; sursumduction—right, 2°+; left, 2°—. Under atropine: O. D., V. $\frac{20}{200}$, made $\frac{20}{20}$ — by + 1·50 s. ⌣+0·75 c., axis 95°; O. S., V. $\frac{20}{100}$, made $\frac{20}{20}$ — by + 1·75 s. ⌣ 0·75 c., axis 115°. Subsequently a very large amount of latent muscular trouble was discovered.

Treatment and Results.—A full correction for her refraction was ordered, atropine being instilled into the eyes whenever ciliary spasm manifested itself. Within two weeks a graduated tenotomy was performed upon both internal recti and all bromides were discontinued. The eye tests showed no hyperphoria; esophoria, 0° to 3°; adduction, 30°; abduction, 9°—; sursumduction—right, 2°+; left, 2°+. No attacks for six days followed the cessation of bromides. All headaches stopped at once, and a marked drowsiness that accompanied the bromide treatment has entirely disappeared.

July 22, 1888.—The following report was made: "No attacks have occurred for the past three weeks; bromides have been withdrawn for six weeks."

The eye tests remain unchanged from last note.

September 4, 1888.—The spherical strength of the distance glass was decreased + 1·00, the cylinder remaining the same, the reason for this change being a persistent tendency to ciliary spasm that exhibited itself at intervals.

October 4, 1888.—Patient shows: Adduction, 28°; abduction, 11°; exophoria, 0° to 2°. She has had only two seizures in about five weeks, one of them preceding menstruation. No bromides have been administered during the past four months. Her expression has undergone a very remarkable change for the better and her physical condition is very much improved.

A report on September 3, 1889, shows that *no severe attack has occurred since July 29, 1889.* Most of the slight seizures that have occurred have appeared during or just prior to menstruation. She has passed over four weeks without any seizure during this period. Her eye tests on this date showed no hyperphoria; exophoria, 0° to 1°; adduction, 27°; abduction, 8°; sursumduction—right, 2°; left, 2°.

December 23, 1889.—Patient reports that "she has had only five light attacks during the past ten weeks, in some of which she did not lose consciousness."

A letter, dated June 12, 1890, from a brother of the patient says: "It has occurred to me that you may have considered that ingratitude has been shown by a failure on my part to indicate how much my dear sister has improved under your advice and direction since the first visit made at your office. My sister has done well since her last visit to you. She is attacked monthly with one or two slight seizures, each decreasing in intensity until, according to her own statement, she merely felt the coming on and then it went away."

This patient moved away from close proximity to New York some four years ago; hence I have not had an opportunity of testing her eyes for that period.

I have endeavored to get a report of her condition, but thus far have not been able to obtain her present address.

CASE X.—Mr. F., aged forty years, married, teacher. Referred to me October 22, 1890.

Family History.—Mother living, aged seventy years. Father died at sixty-three years of age, probably of scrofula. One brother has had nervous prostration. No phthisis or nervous tendencies, so far as known, in any of the ancestry.

History of the Case.—Six or seven years ago the patient began to have momentary lapses of consciousness with pallor, followed by sweating and confusion of mind. For the past two years *these have happened every five or six weeks.* A number are liable to occur at these periods in succession. These attacks are usually attended with nausea; would last about one minute, and would be accompanied by a peculiar dullness of perception and memory that would slowly disappear. The patient would be unfitted for work for from thirty-six to forty-eight hours, and several attacks would occur each day while he was so afflicted. Three weeks before I saw him, while driving, he suddenly became pale, stopped talking, gave a cry, and had a typical epileptic seizure. He was unconscious for half an hour.

Patient has had internal hæmorrhoids to an exaggerated degree with some prolapse of the rectum.

This patient had never taken any of the bromide salts.

Eye Defects.—Without atropine, patient tolerated + 0·50 s. for distance. Under atropine, vision of each eye $\frac{20}{70}$, made $\frac{20}{20}$ by + 1·50 s. He also disclosed esophoria, 6°; left hyperphoria, 0·75°; adduction, 22°; abduction, 4°; sursumduction—right, 2°+; left, 2°—. With a red glass placed over either eye the *patient showed homonymous diplopia.* After wearing 3° esophoria prism for a couple of days, patient showed no hyperphoria; esophoria, 6°; adduction, 30°; abduction, 0°.

Treatment and Results.—On October 27, 1890, a graduated tenotomy was performed upon the right internal rectus. Result: Apparent esophoria, 1°; abduction, 6°.

An investigation of the esophoria by prisms during the ensuing week disclosed a high degree of latent esophoria (8°) with a decrease in abduction (2°).

A graduated tenotomy was then performed upon the left internal rectus. Result: Apparent esophoria, 0° to 4°; abduction, 6°+.

One week later (November 10, 1890) patient was called home. He showed: Esophoria, 1°+; no hyperphoria; adduction, 34°; abduction, 6°; sursumduction—right, 2°—; left, 2°—.

He was ordered + 1·00 s. glasses for reading and for constant wear as soon as they caused no annoyance; and to return later for subsequent investigation of the eye conditions. I suspected at the time that the latent esophoria was still but partially relieved.

During the next year the patient was seen for about one week daily, during which time his ocular muscles were exercised by overcoming prisms. He disclosed (as I suspected that he would) some 6° of latent esophoria, and for part of the year he wore constantly + 1·00 s. ⌣ 1·5 prism, base out, over each eye. During this year he had one slight convulsive attack and five attacks of nausea.

During October, 1891, graduated tenotomies were performed on both interni for the relief of the esophoria which he disclosed. He returned home three days after the last tenotomy, showing: Esophoria, 1°; abduction, 8°; adduction, 32°.

The esphoria prisms were removed from his distance glasses.

January 19, 1892.—Patient reports one attack of nausea lasting about a week. The spells of nausea during this week he states "were not intense or long continued, but came on several times during the day and night, but there were no convulsive seizures."

A letter dated June 19, 1892, reports a week of nausea during the month of April, less severe than the preceding one. He says: "I think I have gained considerably, and am told that I am looking better than usual at this time of year."

November 15, 1893.—Patient visited the office for the first time in two years. He showed: Esophoria, 0·5°; no hyperphoria; adduction, 27°; abduction, 4°.

The patient has had *no epileptic seizure for over two years and only one attack of nausea during 1893.* He came to New York for the purpose of being operated on for hæmorrhoids. The fact that his abduction continues to be low leads me to think that there is still some esophoria remaining in this case. This I propose to investigate, if possible, before his return home. He appears to be in the best of health.

CASE XI.—Mr. B., aged twenty-two years, single, taxidermist, sent to me March 27, 1891.

Family History.—Both parents are living. Father has had frequent epileptic seizures since his fourteenth year. Maternal relatives have severe headaches. No phthisical tendencies. No other cases of epilepsy in ancestry are recalled.

History of the Case.—Patient began to have epilepsy during infancy, while teething. He had no more seizures until his eighth year, when he had several fits. He then went until his fourteenth year without another attack. Since then he has had them quite regularly. He has taken bromides for some years, but none for the past six months.

During the *past six months patient has had over one hundred severe attacks.* He averages at least one a week and often goes only five days without an attack. He is generally totally unconscious during a fit; bites his tongue, but has no aura. He has received several minor injuries by falling. He *averages at least twenty-five attacks of petit mal a day*, in which he loses consciousness, but does not fall.

Patient has a good appetite, sleeps well, and has very little headache. Urine normal.

Eye Defects.—Patient showed the following eye tests: Hypermetropia, under atropine, + 0·75 s.; adduction, 27°; abduction, 3° +; sursumduction—right, 2° +; left, 2° +; manifest esophoria, 5°; no hyperphoria. Later he disclosed considerable latent esophoria.

Treatment and Results.—Full correction for his hypermetropia was given for constant wear. Graduated tenotomies were performed upon both interni within a week. Results after second operation: Esophoria, 1°; abduction, 9°; left hyperphoria, 0·25°. Up to April 6th the attendant of this patient reports that he has had no attacks of *grand mal* and his attacks of *petit mal* are much less severe and less frequent. The patient was obliged to return home, and was instructed to report again for observation after the lapse of eight or ten weeks.

On May 1, 1891, a report from the patient states: "I have had three marked attacks since I saw you—two on April 9th and one on April 22d. I do not think I have had as many spasms as I had previous to my coming to see you. The neighbors tell me that I look greatly improved."

May 13, 1891.—Patient was found dead on the banks of a small stream with a wound in his forehead, caused by a small stone on which he had apparently fallen. His hypermetropic glasses (ordered for constant wear) were found in his pocket.

CASE XII.—Mrs. G., aged thirty years, married, three children, referred to me by Dr. E. W. Hedges, of Plainfield, N. J.

Family History.—Unknown. No hereditary predisposition to epilepsy as far as discovered.

History of the Case.—A letter from Dr. Hedges (January 26, 1893) says: "I have advised Mr. G. to take his wife to you in hopes that you can cure her of epilepsy. She has had attacks for three or four years, following closely upon the birth of her last child. Thinking that a lacerated cervix, with angry, everted lips, might have something to do with it, I sewed up the rent; but she is no better, and if anything worse. I have been so much pleased with the results of your treatment in Mr. B.'s case that it gives me great pleasure to send you another epileptic with the hope that you may be equally successful with her."

Subsequent conversations with her husband elicited the fact that his wife had been kept thoroughly under the influence of bromides, and that continuous epileptic seizures were liable to occur for many hours, at intervals, in spite of the drug. These paroxysms of epilepsy would often last one or two days. The patient was at this date in the South, and the reports from her were extremely unfavorable.

March 1, 1893, this patient was brought to my office for examination.

Eye Defects.—Vision was apparently normal; but, under atropine, the following refractive errors were discovered: O. D., V. $\frac{20}{50}$ —, made $\frac{20}{20}$ by + 1·00 ○ + 0·50 c., axis 90°; O. S., V. $\frac{20}{70}$, made $\frac{20}{20}$ by + 1·25 s. ○ + 0·50 c., axis 90°. Examination of her muscles disclosed: Adduction, 27°; abduction, 5° +; sursumduction—right, 2° —; left, 2° —; esophoria, 2°; no hyperphoria.

Within two days, latent esophoria of 7° disclosed itself, patient meanwhile wearing a full correction for her refraction. Her abduction ran down to 2°, and her adduction increased to 33°.

Within a week graduated tenotomies were performed upon both internal recti. The effect of these operations was to increase the abduction to 8° + and to decrease the manifest esophoria to 1°. It was found the patient would not accept her full correction for hypermetropia and her glass was decreased + 0·50 s.

The physical condition of this patient was a very bad one. Her face was covered with an extreme bromide eruption; her mental powers were very sluggish; she was extremely weak and required an attendant; and was frequently attacked with paroxysms of uncontrollable sobbing and nervous excitement.

October 30, 1893.—Since the last note this patient has had an attack of scarlet fever and her two children have been similarly attacked. She has taken no bromides since March 12, 1893. She has *entirely regained her normal mental condition*, has *increased twenty-eight pounds in weight* since her last visit, and *has had no epileptic seizure for over two months.*

During August she was somewhat irregular in wearing her glasses, and she had twenty-five hysterical seizures, some of which seemed epileptiform in type. Since that time she has worn her glasses constantly and no hysterical attacks have occurred.

November 18, 1893.—Patient reports that she has had *no hysterical or epileptic seizure for three months.* She shows: Vision $\frac{20}{15}$ in each eye with her glasses; adduction, 27°; abduction, 7°; sursumduction—right, 2°; left, 2°; esophoria, 1°.

Her husband, who accompanied her, stated that he considered her as well, and that they were soon to move to the West on account of some new business connections.

A later report (January, 1894) states that she remains absolutely free from hysterical or epileptic seizures.

Case XIII.—Mrs. W., aged thirty years, married, three children. Referred to me April 8, 1893, by Professor A. A. Smith, of New York city.

Family History.—Mother had considerable headache; father is strong and healthy. No hereditary tendency toward nervous diseases or phthisis.

History of the Case.—Urine normal. After the birth of her last child this patient began to have epileptic seizures while residing in high altitudes in the West. She was placed under bromides, but the seizures continued at varying intervals and tended to increase rather than diminish.

She came to New York for medicinal treatment, and was referred to me later to see if any light could be thown on the exciting causes of her attacks.

While no very satisfactory record of the frequency of her attacks could be obtained, the reports made by her husband during the first week that she was under my personal observation show that several marked epileptic seizures occurred within the first week. Her husband also stated that he was afraid, on account of the frequency of her epileptic seizures, to have her take her meals in the public dining-room of a hotel, as he never felt sure when they would not occur.

Generally the seizures had occurred immediately after awakening from a night's sleep.

Eye Defects.—On the first visit to my office, April 8, 1893, this patient showed emmetropia, having $\frac{20}{15}$ vision in each eye under homatropine and tolerating no plus glass; adduction, 23°; abduction, 6°; sursumduction—right, 2°—; left, 2°—; no esophoria; no hyperphoria.

Although the patient showed for two days no manifest muscular defect, her low abduction led me to suspect a latent esophoria.

The patient was therefore given a 1° esophoria prism for twenty-four hours. The following day she disclosed esophoria, 1·5°; abduction, 4°+. Within ten days (by the judicious wearing of prisms) she showed over a 5° prism: Esophoria, 7°; no hyperphoria; adduction, 39°; abduction, 0°; and homonymous diplopia whenever a red glass was placed before either eye without the prism.

I was myself somewhat surprised to find, at the beginning of my investigation of this patient's eyes, an apparent orthophoria with an absolute emmetropia. The serious malady with which she was afflicted and its persistency (in spite of medication) led me naturally to hope for a marked refractive error, and probably also a manifest heterophoria.

It took fully ten days of careful observation in this case before I felt that I was justified in performing a graduated tenotomy, or even in extending to the patient any basis of hope for improvement from the eye treatment.

Treatment and Results.—On April 19, 1893, I performed a graduated tenotomy upon the right internal rectus. Result after operation: Esophoria, 1°; no hyperphoria; abduction, 10°—. Three days later this patient showed esophoria, 0·5°; no hyperphoria; adduction, 33°; abduction, 8°; sursumduction—right, 2°; left, 2°.

Since this operation *no epileptic seizures have occurred.* The patient has been seen at intervals during the past nine months and very little change in her eye tests has been observed. At her last visit to me, in January, 1894, she stated that she was, in her opinion, "absolutely well."

Case XIV.—Mr. S., aged nineteen years, single, telegraph operator. Referred to me, March 2, 1893, by Dr. J. B. Hulett, of Middletown, N. Y.

Family History.—Father died of Bright's disease. Mother has some headache. No hereditary tendencies to nervous diseases so far as known.

History of the Case.—Urine normal. Up to the tenth year of age the patient was perfectly well. At that time he had what was supposed to be a fainting spell.

At twelve years of age the patient had his first severe epileptic seizure. Another followed in a few months, and he was put under bromides. For nearly seven years he took the bromides constantly, but continued to have epileptic seizures at varying intervals. Occasionally he would go three months without a seizure, but more often he would have one every two weeks.

For the past three months he has taken no bromides and the frequency of his attacks has not been materially altered by their withdrawal. Two weeks before coming to me he had two severe attacks in one day.

Eye Defects.—This patient had $\frac{20}{15}$ vision in each eye under homatropine and tolerated no plus glass. He showed on the first examination: Left hyperphoria, 0·25°; esophoria, 0·25°; adduction, 25°; abduction, 6°; sursumduction—right, 2°; left, 2°.

On account of his low abduction, latent esophoria was suspected.

Under the influence of a 1° esophoria prism, which was worn by the patient for twenty minutes, he showed: Esophoria, 3·5°; no hyperphoria; abduction, 5°. Within a few days he wore with comfort a 5° esophoria prism and showed: Esophoria, 7°; adduction, 37°; abduction, 2°; no hyperphoria.

Treatment and Results.—On March 17, 1893, a graduated tenotomy was performed on the right internal rectus. After the operation the patient showed: No esophoria; abduction, 9°. Two days later the patient showed: Esophoria, 0·5°; adduction, 37°; abduction, 8°. The patient went home and resumed his vocation, with instructions to return after the lapse of a few weeks.

April 17, 1893.—Patient visited my office and reported that he *has had no attacks during the past five weeks.* He shows: Esophoria, 0·5°; no hyperphoria; adduction, 38°; abduction, 6°+; sursumduction—right, 2°; left, 2°.

On April 25, 1893, this patient was seized with an epileptic attack. During the fit he overturned a lamp, which set fire to his clothing and burned him so that his life was for a time despaired of. On December 2, 1893, this patient reported at my office for further examination of his eye defects. He states that he *passed over six months without any epileptic seizure.* During October, 1893, a slight seizure appeared, but since then he has been apparently well and does not even have any of his old apprehensions of an approaching epileptic fit. He discloses no hyperphoria; esophoria, 1°; adduction, 30°; abduction, 7°.

On January 9, 1894, the patient reported that he had passed three months with no attacks, and only one epileptic seizure had occurred in over nine months.

Case XV.—Mr. P., aged twenty-six years, single, merchant.

Family History.—Maternal relatives are all more or less nervous and most of them have eye defects.

Father has very marked difference in refraction of the two eyes with an approach to vertical strabismus.

One brother has had a few attacks of epilepsy. One sister was a chronic invalid for many years, until her eye defects were rectified by me.

History of the Case.—This patient's first attack occurred in 1883, and he has had them at irregular intervals ever since. They occur always at night. He usually bites his tongue during the attack. This is often the only way that he knows he has had an attack, as he finds a little blood on the pillow. *During the past year he has had six severe epileptic seizures.* He has taken bromides during the past few years without any apparent influence upon his attacks.

He has been troubled all his life with the most obstinate form of chronic constipation, for which he has taken cathartics regularly every night at the advice of different physicians. This finally produced piles so badly that several operations were necessary for their removal. He has always noticed that he is more liable to have an attack when he is troubled the most with constipation.

He has consulted several prominent neurologists, all of whom have told him that his attacks were genuine epilepsy and incurable except by bromides. His mother finally became discouraged with the negative results of the bromide treatment and brought him to me for diagnosis and treatment on September 7, 1892.

Eye Defects.—At the first visit this patient showed the following eye tests: Vision under homatropine $\frac{20}{20}$ in each eye; slightly improved by + 0·50 c., axis 90°; no hyperphoria; esophoria, 2°; adduction, 23°; abduction, 5°; sursumduction—right, 2° + ; left, 2° +.

Within a week, while wearing a 5° esophoria prism, he showed: Esophoria, 7°; no abduction; adduction, 35°. *Unconquerable homonymous diplopia* when the prisms were removed. Later he disclosed a very high degree of latent esophoria.

Treatment and Results.—Three graduated tenotomies were performed, two on the right and one on the left internal rectus. The latent esophoria was developed by the judicious use of prisms before each operation. The last operation was performed on November 18, 1892.

Since that time the patient has been seen at frequent intervals and his eye muscles carefully tested; but he shows a condition of practical orthophoria. His tests at his last visit, September 14, 1893 were: No esophoria; no hyperphoria; adduction, 45°; abduction, 8° — ; sursumduction—right, 2° + ; left, 2° +.

The patient had an epileptic seizure the day after the first examination of his eyes, and another light attack in January, 1893. *Since then he has had no epileptic attack* of any kind and reports that he has a movement of the bowels every day regularly without cathartics; has abandoned all drugs for that purpose; has gained very markedly in weight, and considers himself perfectly well. He has taken no bromide salts since his first visit to my office.

On December 1, 1893, this patient had an epileptic seizure that was quite severe, followed by vomiting. I am informed that he had been exercising violently each day for some months and had lately been taking cod-liver oil without my knowledge. That seemed to cause a gastric derangement.

Case XVI.—Mr. H., aged eighteen years, referred to me by Dr. C. E. Stephens, of Syracuse, N. Y., on March 23, 1893.

Family History.—No hereditary tendencies to nervous diseases, so far as is known.

History of the Case.—Patient has been afflicted with attacks of *petit mal* for a number of years, and for the past few years has had numerous attacks of *grand mal.* Bromides were tried, but had no marked influence upon the attacks.

When he came to me for examination he was averaging one attack of *grand mal* a month, and from two to fifteen attacks of *petit mal* a day.

These attacks of *petit mal* were described by him as "whirling attacks," in which objects appeared to dance before his eyes, whether open or shut, in various fantastic forms.

A number of these seizures were observed in the office and found to be genuine attacks of *petit mal.* His conversation would be abruptly stopped; his head would turn slightly to the left with some twitching of the mouth; he would mutter a few incoherent words, rub his eyes, and in a minute or two return to his former condition of mind. He is very sluggish mentally, but perfectly rational. The whole aspect of the patient was that of a person who was somewhat defective mentally. His movements were slow and he had a peculiar drawling articulation.

Eye Defects.—The eye conditions of this patient were particularly difficult to solve. It seemed almost impossible to get any satisfactory tests either for refraction or heterophoria. Patient had marked divergent strabismus and before atropine was used his vision was only $\frac{20}{40}$— and could not be improved. Under full atropine his vision was made $\frac{20}{30}$— by + 2·50 s. in the right eye and + 1·00 s. in the left eye. No accurate muscular tests could be obtained, as the patient could not be made to see two images even with a red glass. He was very slow in speech and had several "whirling" attacks during the tests. An ophthalmoscopic examination showed no abnormal condition of the retina.

Treatment and Results.—A full correction was given for his hypermetropia and atropine used until he would tolerate it. Free graduated tenotomies were performed upon both external recti. After the operations patient showed very little lateral jump on exclusion, but apparently some vertical jump for right hyperphoria. He was sent home with instructions to keep up the use of atropine and report weekly.

October 25, 1893.—Up to this date the patient has had but two attacks of *grand mal* since March last, having gone at one time four months without an attack. The patient seems to think that his attacks of *petit mal* or "whirling attacks" have been much less frequent.

It is still impossible to obtain any accurate muscular tests, as the patient does not seem to have binocular vision. He uses either eye at will, but seems unable to see with both eyes at once. His face indicates a right hyperphoria and he has a slight vertical jump on exclusion. A 2° right hyperphoria prism was combined with his distance glasses and the patient sent home for a few months.

The inability to get any muscular tests makes this case a very difficult one and leaves me in doubt as to what his future treatment will be.

(*To be concluded.*)

AMPUTATIONS PROTHETICALLY CONSIDERED.*

By GEORGE E. MARKS, A. M.

Intercourse with a considerable number of surgeons—those who reside in the centers of prothetical industry as well as those who inhabit more remote parts—discloses a lamentable absence of knowledge on the subject of amputations when viewed in the light of prothesis.

In consequence of a want of familiarity with this aspect of the subject, we artificial-limb makers have frequently brought to our presence stumps that are good, bad, and indifferent; stumps that could have been better; stumps that reflect credit, discredit, and no credit on the surgeons who performed the amputations, or on those who attended to them after the amputations were performed; stumps that can readily be inserted into artificial limbs with the assurance that no trouble will follow and that the possessors will live in the sublime consolation of having realized the removal of their disabilities for all practical purposes; stumps that might have been better and would have been beyond criticism had the operators taken advantage of opportunities which familiarity with prothetical methods would have revealed to them.

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* Read before the Section in Military Medicine and Surgery of the First Pan-American Medical Congress.

The time has arrived when this subject should receive more thought and when prothetical knowledge should be more widely disseminated.

I can see in the not very distant future the subject of prothesis embraced in the curricula of the schools and colleges of surgery, when a graduate will be equipped with all the information requisite to guide him to not only amputate properly, but to put the stump in the most favorable condition for the prothetician; to take measurements, diagrams, and casts when necessary, to enable his patient to obtain a suitable appendage with the least delay; when his knowledge will enable him to detect defects in adjustment and to remove them; to prescribe changes that may be required in an artificial limb to accommodate changes that may take place in a stump. As surgeons will always be more numerous than leg makers, it is all the more important that their information on this subject should be broad and thorough.

I shall discuss the subject of Amputations Prothetically Considered from but a few standpoints, confining myself to amputations of the lower limbs only.

1. *Length of Stumps.*—Any stump that is well covered with integumentary tissue can not be too long. I am well aware that when I advance this proposition I antagonize the views of those artificial-limb makers who have not kept abreast of the times, and am controverting the rules that have been laid down by some writers of repute on the subject.

Artificial-limb makers not many years ago, almost to a unit, decried the amputation of a leg below the junction of the lower and middle third, or "the point of election" so called, and were pronounced in their utterances against all ankle and partial foot amputations.

The methods which were then employed produced artificial legs that were not capable of adaptation to long stumps, particularly to stumps that extended to the ankles or below the tarsus. I may add that this adverse opinion on long stumps is still held by some protheticians, notwithstanding the fact that great departures have been made during the past decade or two in prothetical methods. When a leg maker of modern times says that an amputation should not be made below the point of election, you may regard him as confessing that he has not the ability to make a leg that can be worn on a long stump.

To-day artificial legs are made that can be worn on stumps of any length—tibiotarsal, mediotarsal, and tarsometatarsal not excepted. Any stump that is capable of bearing weight on the extremity is preferable to one that can not. A tibiotarsal amputation made after the method of Mr. Syme produces an end-bearing stump, and can be placed in the category of "the most favorable." An amputation after Dr. Pirogoff's method is also productive of an end-bearing stump, provided the os calcis is properly placed and united to the tibia or securely held in the intermalleolar space. An amputation in the tarsus or at the tarso-metatarsal junction after any of the methods of Chopart, Lisfranc, Hancock, or Hey, is productive of a stump that is capable of being treated prothetically.

In every partial foot amputation care should be exercised to prevent the contraction of the tendo Achillis; usually lashing in a suitably contrived splint will suffice. If this means will not accomplish the object, either tenotomy or fixation of the ankle joint should be resorted to, for if the heel is allowed to draw up and the amputated surface point downwardly, the possessor of that stump will be obliged to have an artificial leg applied that will not touch, but that will shield the amputated surface. This means that the artificial leg will elongate that side and necessitate the wearing of a thick sole and heel on the shoe worn on the well or companion foot. Such a stump ceases to be an end-bearing stump and its disadvantages are apparent.

I have a horror for those modifications of Chopart's and Pirogoff's operations that do not provide flaps on which the weight of the subjects can be endured. A case was brought to my attention some years ago which I can opportunely refer to here. A young man, a farmer by occupation, residing in Vermont, had his foot crushed. Amputation was deemed necessary. A modification of Chopart's operation was performed. The stump that resulted presented the appearance of an inverted cone, the apex scantily covered with tissue and extremely sensitive. This stump was hopelessly an end-bearing stump, and had to be treated the same as if amputation had been made above the ankle. It is obvious that inasmuch as a Chopart's operation could not have been performed, a Pirogoff's or a Syme's, or even an amputation above the ankle, would have given the patient a much better stump. This illustrates the importance of amputating for an end-bearing stump in a way to save the continuity of bone and to obtain an ample flap, even if the tarsus has to be sacrificed.

The advantages of a totally or partially amputated foot, producing an end-bearing stump, over a leg amputation are many. The more important are the following:

1. An artificial leg for an ankle or partial foot amputation costs only half the standard price of an artificial leg for an amputation above the ankle.

2. An artificial leg for any of the above end-bearing stumps does not incase as much of the leg and thigh as an artificial leg for an amputation above the ankle.

3. The possessor of a stump extending to the ankle can improvise a sheath with suitable pad on which he can rest his stump and walk tolerably well; or if his stump extends to the metatarsus and he has a portion of the plantar surface of the foot left, he can walk and get about quite well without any contrivance. These are vital considerations for the poor man, and should be regarded by the surgeon.

The most modern and approved artificial legs for ankle and partial foot amputations provide phalangeal support, which will readily be conceded is absolutely necessary to aid progression and prevent limping. The absence of phalangeal support is always felt by those who do without prothetical assistance.

During the past two years I have personally superintended the construction and application of over three hundred legs to stumps that have followed tibiotarsal, mediotarsal, and tarso-metatarsal amputations. During the existence of the house of which I am a member (A. A. Marks) over fourteen thousand subjects, with amputations at various points of the leg, thigh, and arm, have been supplied with artificial limbs. Most of them have come under my personal supervision. With this experience I feel myself competent to say that long stumps with ample flaps, that stumps resulting from tibiotarsal, mediotarsal, and tarso-metatarsal amputations, can be supplied with artificial legs that will be comfortable and pleasant to wear, and that will restore the wearers to the amplitude of their usefulness.

A stump extending below the knee is preferable to a stump extending to the knee, provided the stump is capable of flexion and extension. If the stump is disposed to become extended and ankylosed, it will be preferable to sacrifice the leg to the knee.

I had occasion to share the regrets of a subject that was brought to my office not many years ago. This man's leg had been amputated about four inches below the knee articulation; the stump was extended and ankylosed. To make an artificial leg for him would necessitate a rigid knee in the artificial or an articulating knee out of parallelism by about four inches with the natural knee. Either would place the fellow at a disadvantage, especially when sitting. If in the amputation of this leg the operator had had any indication that his patient's stump would become extended and ankylosed, he would have displayed greater wisdom if he had amputated through the knee articulation. Any amputation below the knee should, as far as possible, be made with proper regard to the preservation of full knee mobility, and during the recuperative period the knee should occasionally be forced into action, so as to prevent impairment of the flexors and extensors.

A stump extending to the knee is preferable to a shorter stump. The condyles and nodules of the femur should never be excised in knee disarticulations. The nodules afford means for securing an artificial leg, and the condyles and articular surfaces are better prepared by Nature to endure pressure then the saw or the knife can prepare them.

If the patella can be placed in the intercondylar space and properly secured, it is always desirable to do so.

The foregoing, I hope, will serve as an appeal to every operating surgeon to sacrifice as little of the human limb as possible, giving a proper regard to the securing of integumentary tissue for the purpose of covering the extremity and protecting the partly excised bones. These are certainly the teachings of the wisest and most conservative surgeons of the past, and I know of no reason why they should now be relegated to obsolescence.

2. *Flaps.*—All stumps should be provided with ample flaps, not redundant flaps. A redundance of tissue on the extremity of a stump is no advantage. The prime office of a flap is to protect the extremity of the bones, and they should be only ample to effectually perform that function; whether the flaps are anterior or posterior, exterior or interior, or a combination of any of the four, it matters not, so long as the extremities are well protected. Periosteal flaps are desirable, as they give additional protection to the bones and prevent integumentary flaps from becoming adherent to the bones.

If an amputation is to be done below the middle third of the leg, bone should be sacrificed in order to obtain suitable flap. If the amputation is to be made above the middle third, bone should not be sacrificed, even if transplantation is necessary in order to secure flap. Every inch of healthy bone above the middle third is desirable for leverage purposes. If a thigh amputation is to be done close to the knee, bone can be sacrificed in order to secure flap. The nearer the amputation is to be done to the body, the greater should be the care to save bone.

3. *The Disposition of Cicatrices.*—The rules established by all the accepted authorities on ankle and partial foot amputations should be rigorously observed. By so doing, the disposition of the cicatrices will be the most advantageous for prothetical purposes.

In all amputations of the leg and thigh as well as knee disarticulations the cicatrices should, as far as possible, be placed well away from the extremities of the bones and preferably along the posterior aspects. Contiguity or adhesion of the cicatrix with the extremity of a bone is frequently the cause of suffering.

4. *Treatment of Stumps after they have become Healed.*—A stump, before it is called upon to perform the functions of operating an artificial limb, is an inactive remnant of an active member of the body. On account of its inactivity, it becomes disposed to accumulate adipose tissue, and, if permitted to do so, it will become abnormally large and œdematous. If possible, this growth or condition should not be permitted. Usually tight bandages will prevent it. The bandages should be applied from the time the stump has healed until the artificial leg is applied. The bandages should be as tightly drawn as possible and not interfere with circulation. The bandages should be applied in the usual way, beginning at the extremity of the stump and continued the entire length of the complete section of the limb above the stump. This means for a partial foot amputation that the bandage should be carried to the knee, and for a leg amputation that the bandage should be carried to the body.

I have frequently met surgeons who incline to the belief that an attenuated stump should be allowed, and in fact encouraged, to grow so as to possess the dimensions of the companion leg before an artificial limb is applied. This certainly would be desirable if such growth would permanently and effectually resist the influence that an artificial leg will exert on the stump to reduce it.

It can be stated for a certainty that an artificial leg will harden, solidify, and diminish any stump. In consequence of this, it is desirable to keep the stump as small as possible so as to minimize the changes that will follow the application and wearing of a leg.

5. *Time to apply an Artificial Leg.*—It will be safe to apply an artificial leg to a stump that has resulted from traumatic causes as soon after the healing of the stump and the recovery of the patient to his normal vigor as possible. Nothing can be gained by waiting beyond that time.

Waiting entails a loss of time and permits the stump to become enervated from disuse.

A stump that is the result of disease, especially if of a malignant nature, should be obliged to wait until there is a certainty that the pressure, confinement, and concussion that follows, more especially the initial operations on an artificial leg, will not excite a recurrence of the disease.

A child who has lost a leg is never too young to have an artificial leg applied. It should be observed that the tissues, bones, and articulations of an infant or a growing child must be forced into action in order to become developed, healthy, and vigorous.

To hobble about on one crutch or a pair of crutches for a number of years is rather a severe and inhumane punishment to impose on a child because he is growing. An artificial leg of modern construction can be lengthened from time to time at a very slight expense, and as an artificial leg provides the nearest approach to a natural prop for the amputated side, it is the only means that will encourage healthful growth and symmetrical development.

To illustrate this fact, I can do no better than present the case of an infant brought to me by Dr. Bacon, of New Haven, Conn. The child was not quite nine months old when I took her in charge. Her leg had been amputated two inches below the knee for congenital causes. The stump tended to flex and remain so; ankylosis was feared. I applied a neat-fitting leg with knee articulation. The artificial leg held the stump in extended and flexed positions, according to the manner in which the child was held or placed. In a few months the child began to creep, a few months later she was able to stand, and later still she learned to walk. The artificial leg assisted her in all these operations of progression. She developed rapidly and symmetrically, and to-day she is a young lady of comely proportions, enjoying good health, walking as gracefully as one in possession of Nature's limbs—a testimony of the wisdom of applying artificial limbs to the young when misfortune has deprived them of their share of extremities.

The Syracuse Academy of Medicine.—The medical profession of Syracuse, New York, having outgrown their old City Medical Association, have made a complete reorganization of it and call their new society the Syracuse Academy of Medicine. They have obtained permanent quarters which have been newly furnished to meet their needs, and a library and reading room are new features. A bequest of $500 from the late Dr. Shipmam is to form the nucleus of a library. The whole profession have entered into the new organization with an enthusiasm and unanimity that assure a successful future. Regular meetings will be held on the first and third Tuesday evenings of each month. The following officers have been elected for the present year: President, Dr. H. D. Didama; vice-presidents, Dr. Alfred Mercer and Dr. John Van Duyn; secretary, Dr. T. H. Halsted; treasurer, Dr. E. L. Mooney; members of the council, Dr. Ely Van de Warker and Dr. N. P. Warner; trustees, Dr. J. L. Heffron, Dr. H. L. Elsner, Dr. R. C. McLennan, Dr. D. H. Murray, and Dr. F. H. Stephenson.

The New England Society of the City of New York.—Dr. William N. Hubbard has been elected a member of the medical board.

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ANOTHER BILL FOR A BUREAU OF PUBLIC HEALTH.

Each year witnesses the introduction into Congress of some bill intended to provide for national supervision of the public health, and it is scarcely a matter of surprise that a bill has been introduced into the present Congress that has for its purpose the establishment of a bureau of public health within the Treasury Department of the United States. This bill, number 4833 in the House and number 1153 in the Senate, aspires to a completeness and comprehensiveness that are likely to mislead many who may not have followed the trend of sanitary legislation in this country. It speciously presents good features that are not new, although they have been less than a year upon our statute books, while it proposes new measures that do not seem to us to be good.

The first section of the bill divides most of the United States into nine sanitary districts, each district to have one representative in the bureau. Here we note the curious feature of the largely populated States of Illinois, Indiana, Michigan, Ohio, and Wisconsin, with their diverse and important sanitary interests, having no more representation and supervision than the sparsely populated States of Idaho, Minnesota, Montana, North Dakota, and Washington and the Territory of Alaska. To present the matter more forcibly, a district having a population of little more than two million inhabitants, a total that is less than the population of each of the first-mentioned States except Wisconsin, is to receive the same expert attention as one having a population of almost thirteen millions and a half. Perhaps this is because of the justifiable faith of the formulators of this bill in the admirably organized boards of health, and it is not an invidious distinction to refer particularly to those of Michigan and Illinois, in the first-mentioned district of States.

We said that most of the States were provided for in the bill. This was because Louisiana, that has the proud distinction of originating the modern system of maritime quarantine, is not referred to in any of the sanitary districts mentioned in the bill. Are we to conclude that, therefore, she does not require the supervision of the general government?

The second section of the bill provides for the creation of a bureau of public health, to consist of a commission of fifteen, eleven of whom shall be appointed by the President, and the four others to be the surgeon generals of the army, the navy, and the Marine-Hospital Service and an officer from the Department of Justice. As these officers are to be under the direction and supervision of the Secretary of the Treasury, we are surprised to note the omission from the bill of repealing sections of those statutes that give the Secretary of War and the Secretary of the Navy exclusive jurisdiction respectively over the surgeon general of the army and the surgeon general of the navy. Furthermore, one surgeon general of the army has placed himself on record as opposed to medical officers of the army having anything to do with quarantine duty, and it is possible that the present incumbent will feel that his subordinates can be actively occupied in the performance of their military duties. It will be seen that these two sections are but an enlargement of the provisions of the defunct National Board of Health law.

The third section provides for the organization of the commission, and it is remarkable that this apparently representative body is compelled to select one of the two members at large as president, while the other becomes vice president. In other words, the nine representatives of all the States are not privileged to select one of their number as their presiding officer. Furthermore, while the members in general have but three years to serve, each of the members at large serves for six years. As it is evidently the intent of this section to provide for the selection of new members each year, it is not apparent why any discrimination is made in favor of the members at large, or why they, more than the others, should be specially favored. The president of the board has authority to call special meetings of the members, and there is to be an annual meeting every October.

The fourth section provides for an executive committee that consists of the commanding officers of the medical departments of the government, the commission's president, and the Department of Justice official. The commission's vice president is omitted from this committee.

The fifth section authorizes the commission to have conferences with officers of State boards of health. We fancy that with such a commission these conferences would be as frequent as the Greek kalends.

The sixth, ninth, tenth, eleventh, twelfth, thirteenth, fourteenth, fifteenth, sixteenth, seventeenth, eighteenth, nineteenth, twentieth, twenty-first, twenty-second, twenty-third, twenty-fifth, and twenty-sixth sections are nothing but the present national quarantine laws with slight changes in phraseology.

In fact, the entire bill is devoted to border and inter-State quarantine, with the exception of section seven, that provides for investigations into the nature, origin, and prevention of contagious, epidemic, and other diseases.

In other words, Congress is asked to re-enact the quarantine act passed February 15, 1893, and to substitute for the present single executive a heterogeneous collection of medical men. Presumably the reason for this is that the responsibilities of the office are too great for one man. If this is so, why not fifteen Presidents, or ten Secretaries of the Treasury, or half a dozen judges of a court at one and the same time? Out upon such logic! It is a plea for more, not better, officeholders and for greater extravagance in the disposition of public funds.

This bill would abrogate existing legislation and give us nothing better. In place of the Marine-Hospital Service, that has demonstrated its efficiency, and whose corps of officers constitute the only large body of medical men in this country that has been trained in sanitary laws and methods, we are to have a commission whose members will necessarily often be appointed as a result of political influence, and consequently whose knowledge of hygiene will be less than that of the interest they are likely to display in dispensing patronage. The men that would be qualified to fill such positions could not afford to jeopardize their practices by accepting them, and the men that would scramble for these offices are not desirable. The political doctor is likely to know his politics better than his medicine.

This proposed law, in its very nature, will not receive the support of the medical profession of this country, and we can not suppose that Congress will pass it in its present form, increasing as it does the number of officials and that of salaries without a corresponding increase of means for the protection of the public health.

MINOR PARAGRAPHS.

FRACTURE OR DISLOCATION?

A suit for malpractice against a well-known physician of Brooklyn has recently been publicly noticed. The complainant, at one time a hospital nurse, suffered from a fall down a long and steep flight of stairs. An injury of the arm resulted, which the defendant diagnosticated to be a fracture. The treatment was by means of splints at first, and a plaster dressing soon afterward. The patient states that the suffering increased to such an extent that she deserted her physician and resorted to the City Hospital, where she had formerly been on duty as a nurse. At that hospital, it is further stated, the house surgeon declared that the injury was not a fracture but a dislocation. There is promise of an acrimonious discussion in court, as is too apt to be the case in questions of this nature, over the diagnostic points and the severity of the damage. We may expect an ultimate vindication of the practitioner, but he will be ground between the upper and the nether millstones of misrepresentation and law-costs.

THE MEDICAL MISSIONS OF GREAT BRITAIN.

The compiler or editor of *Whitaker's Almanac* for 1894 has collated some statistics concerning medical men in foreign fields. It states that there are 359 fully qualified physicians serving the various missionary societies. Seventy-four of them are women. There are sixty mission hospitals in China. That at Canton has a hundred beds, and the Swatow hospital has about the same number, while that at Srinagar, in the Vale of Cashmere, has eighty. The Free Church of Scotland alone sends out not fewer than twenty-five medical missionaries, many of them men of commanding ability.

DEATH IN AN ATTEMPT TO WIN A WAGER.

The London correspondent of the *American Practitioner and News* tells of a man who, in an English ale-house, made a bet that he could take a billiard-ball into his mouth and close his lips over it. He made the attempt and seemed to have accomplished the feat. He was seen to struggle, however, and died by suffocation while being taken to a hospital. At the inquest it was found that the billiard-ball had been crowded back so far as to obstruct the upper lumen of the larynx, while the epiglottis was not seen to be depressed. The organs of the body were healthy but congested.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 23, 1894:

DISEASES.	Week ending Jan. 16.		Week ending Jan. 23.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	0	0
Typhoid fever	6	1	7	7
Scarlet fever	113	13	116	9
Cerebro-spinal meningitis	0	0	0	4
Measles	473	24	606	20
Diphtheria	187	52	225	65
Small-pox	8	2	27	3

The Medical Society of the State of New York.—The "delegates' train" for Albany will leave the New York Central and Hudson River Railroad station on Monday, February 5th, at 3 30 P. M. Those who wish for seats in the private car should notify Dr. Alexander Dallas, of No. 65 West Thirty-sixth Street.

The Medico-chirurgical College of Philadelphia has created three new clinical chairs, viz.: Genito-urinary surgery, orthopædic surgery, and otology. These, together with the vacancy in the chair of clinical medicine, will be filled permanently at the end of the present session.

The New York State Medical Association.—The tenth annual meeting will be held in Brooklyn on Tuesday, May 22, 1894. All fellows desiring to read papers will please notify the secretary, Dr. E. H. Squibb, P. O. box 760, Brooklyn.

The Philadelphia Board of Health.—Dr. Myers, of that board, has recently reported that diphtheria may be prevented by the inoculation of a protective serum. It is announced that the next number of the *Therapist* will have the full text of that report.

The Pauper Insane of Queens County.—The removal of the lunatic poor—forty-three males and forty-five females—of Queens County was recently effected. They were taken a part of the way by special train from the asylum at Mineola, and part of the way by stages. Twenty male and ten female nurses were in charge of them.

The Brooklyn Health Commissioner's Office.—It is announced that the new commissioner, Dr. Z. Taylor Emery, has appointed Dr. Richard M. Wyckoff deputy commissioner, Dr. George E. West secretary, and Mr. Alexander H. Van Cott counsel.

A Parisian Honor to a Physician's Memory.—We learn from the *Progrès médical* that the *rue des Fontis* has been named the *rue Blanche*, in honor of a deceased physician of that name.

Society Meetings for the Coming Week:

TUESDAY, *January 30th:* Medical Society of the County of Onondaga (semi-annual—Syracuse), N. Y.; Boston Society of Medical Sciences (private).

WEDNESDAY, *January 31st:* Auburn, N. Y., City Medical Association; Middlesex, Mass., North District Medical Society (Lowell); Gloucester, N. J., County Medical Society (quarterly); Berkshire, Mass., District Medical Society (Pittsfield).

THURSDAY, *February 1st:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, *February 2d:* Practitioners' Society of New York (private); Baltimore Clinical Society.

SATURDAY, *February 3d:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Letters to the Editor.

THE GALVESTON COUNTY, TEXAS, MEDICAL SOCIETY.

GALVESTON, *January 18, 1894.*

To the Editor of the New York Medical Journal:

SIR: The old so-called Galveston County Medical Club was reorganized the year before last under the name of the Galveston County Medical Society, which is now composed of the most earnest members of the medical profession of this city and vicinity. The strife, political and other, under which the profession here had been unfortunately laboring for quite a number of years is fast disappearing. Hopes are entertained, with good foundation, to the effect that the new corporation may be a bond of union, harmony, and good will for the medical fraternity of this city, the majority of whom are firm believers in, and faithful observers of, the code of ethics of the American Medical Association.

During the year just closed several papers were read before the Galveston County Medical Society, which have been published in medical periodicals, especially the *Texas Medical Journal*, the official organ of the society.

At the regular meeting of the society, held November 6, 1893, the following officers were elected for the current year: President, Dr. William Keiller; vice-presidents, Dr. A. F. Sampson and Dr. J. E. Thompson; treasurer, Dr. W. H. Baldinger; secretary, Dr. David Cerna; executive committee, Dr. A. J. Smith, Dr. R. C. Hodges, and Dr. Edward Randall.

At the meeting of the 20th of November, 1893, Dr. John B. Haden read a paper entitled The Visual Field and the Perimeter, which elicited an animated discussion participated in by Dr. A. J. Smith, Dr. R. C. Hodges, Dr. J. E. Thompson, and Dr. W. Keiller. At the meeting of the 4th of December two papers were presented, one on Uterine Hæmorrhages, by Dr. William Keiller, and one on Vomiting in Pregnancy, by Dr. George H. Lee. Both papers were extensively discussed, the first by Dr. B. E. Hadra, Dr. J. E. Thompson, Dr. H. A. West, and Dr. A. F. Sampson, and the second by Dr. B. E. Hadra, Dr. A. G. Clopton, and Dr. D. Cerna.

Dr. Keiller wrote on the hæmorrhages occurring in abortion, extra-uterine pregnancy, uterine or cervical polypus, fibromyoma, inversion of the uterus following parturition or the result of an effort at expulsion of a pedunculated fibroid, and sarcoma and carcinoma, describing separately the diagnosis and treatment. The author thought that, with reference to the treatment of cancers, in epithelioma of the cervix where the whole disease could be removed by supravaginal amputation of the cervix, that operation was to be preferred to hysterectomy, as the results were exceedingly good and the risks very small. Where the disease had gone further than could be reached by this method, but had not spread to the broad ligaments, vaginal walls, or bladder, vaginal hysterectomy by ligature, or by clamp if the ligature was impossible, was the proper treatment. The results were as good as for cancer of the mamma, most patients having at least a period of comparative health. Where the complete removal of the disease was impossible, hæmorrhage and the fœtor of the discharge might be kept in check by the curette or thermocautery and iodoform tampons.

In discussing the paper, Dr. H. A West, referring particularly to the treatment of hæmorrhage due to abortion, said that there was a certain number of cases, and they were too apt to recur repeatedly in the same woman, in which the fœtus was expelled, yet the afterbirth remained firmly but partially attached, and there was furious bleeding from the open mouths of some uterine sinuses. What was to be done under such circumstances? The answer to this question was not always easy. The paramount indication would appear to be to remove the retained placenta which was the cause of the hæmorrhage. But how and when was this to be done? Who had not experienced the difficulty in extracting a placenta or an ovum when the os was contracted so as barely to admit one finger? The difficulty was still greater when there was more or less complete detachment. If one gave chloroform and attempted to break up and remove the foreign matter piecemeal with the finger or curette, portions were likely to be left behind, and were a certain source of future trouble. He believed that it was better practice, unless we were certain that we could remove the entire uterine contents, to tampon the womb as well as the vagina thoroughly with iodoform gauze, which would control the bleeding and give a little time for Nature to separate the adherent mass from the uterine wall, when it would often be expelled spontaneously, and, if not, its removal with finger, forceps, or curette became a comparatively easy matter.

Dr. A. F. Sampson could not agree with those who said that ectopic pregnancy was easily and rapidly diagnosticated. He admitted that when this form of pregnancy had been going on for two months, or rupture of the sac, with its attending shock, had taken place, it was an easy matter, but not so in the first weeks of ectopic gestation. To illustrate: He had been called to a case at midnight in the latter part of September. There was no evidence of any shock. The patient gave a history of delayed abortion. She had gone but a few days over her menstrual period, and had had uterine pains and some hæmorrhage for the preceding three or four days. From what he could gather, he believed the product of conception had passed, and the pains that were referred to the uterus were due to the partially retained placenta, etc. He prescribed ergot, quinine, and hot vaginal douches. There was no abnormal temperature, the pulse was in the eighties, and no evidence of a serious condition was manifested. The patient seemed to progress satisfactorily for several days, though slight hæmorrhages kept up. Twenty days after his first visit, the patient not doing satisfactorily as to the flow, which still kept up and began to have an offensive odor, he had chloroform administered, dilated the cervix, and curetted. Before doing this he made a careful examination and detected no evidence of pelvic trouble except what he attributed to the endometrium. His patient seemed to have no immediate bad effects from the curetting; in fact, she seemed to improve to such a degree that he, in due time, allowed her to sit up. Later, pelvic cellulitis was set up and proved obstinate to treatment. A consultation was had, and his diagnosis of pelvic cellulitis was confirmed, as by that time a mass had developed in the right pelvic region. Later still this woman passed out of his hands and became the patient of a most skilled surgeon, whom he had kept well informed as to the progress of the case. Shortly after taking charge of the case, the attending physician suspecting that an abscess had developed which seemed to point toward the vault of the vagina, opened up what he expected to find a pelvic abscess, when lo! a gush of blood, with a profuse hæmorrhage following, proved it to be a case of ectopic pregnancy.

Dr. J. E. Thompson related a case of extra-uterine pregnancy at the fourth month in which all the signs of pregnancy but that of hæmorrhage were present. A complete decidua was passed at the second month. A tumor was found occupying a position to the left of the uterus; it was freely movable, was of the size of an orange, and could be completely explored. An operation was done at the fourth month, and the tumor completely removed without difficulty. It proved to be a gestation in an ovarian sac; no fœtus was present, but placental villi were found microscopically.

In the discussion of Dr. Lee's paper, the idea seemed to prevail that washing out the stomach with warm sterilized water, in preference to the administration of drugs or even to operation (of course, in exceedingly rare cases), was the most rational method of treatment in a large number of cases of vomiting in pregnancy. Dr. Lee did not entirely agree with this idea, and thought that in many cases an operation was most urgently demanded.

At the meeting of the 18th of December Dr. James Kennedy read a paper entitled Traumatism as a Factor in Uterine and Ovarian Pathology. He made the point that traumatism was the most common factor in the production of pelvic disease, and reported cases apparently in support of his assertion. In discussing the paper, Dr. B. E. Hadra said he believed that traumatism produced lesions anywhere provided the field was prepared beforehand. He did not believe that traumatism *per se* could produce inflammation of the pelvic organs. Even in virgins apparently healthy otherwise he assumed that traumatism produced disease when previous infection had occurred in one way or another. Dr. W. Keiller called attention to cystic degeneration, which by itself, he thought, meant nothing, since it could be confounded with healthy enlarged follicles of the ovary. He agreed with Dr. Hadra in not considering traumatism as a factor by itself in causing pelvic troubles. He did not believe that leucorrhœa, for instance, could be made a ground for diagnosis of septic or non-septic inflammatory processes. In closing the discussion, Dr. Kennedy persisted in the belief that traumatism, by interfering with nutrition, was alone sufficient to cause structural degenerative changes of the parts, even in the absence of germs, without producing suppurative processes. Dr. Hadra replied by saying that he did not believe that cystic degeneration was necessarily the result of inflammatory processes.

There was a large attendance at the meeting held on the 15th inst., when Dr. Edward Randall read a very interesting paper on Acute Anterior Poliomyelitis, and reported several cases. From a close study of these cases he held the view that the disease was infectious. The discussion was a very spirited one and tended to the support of Dr. Randall's idea of infectiousness in regard to the disease under consideration. But, since this communication is already too long, I will refrain for the present from giving you any details relating to this interesting question.

At the next meeting of the society, to be held on the 22d inst., besides the reading of papers by Dr. A. F. Sampson and Dr. A. J. Smith, the subject of Code Revision will be introduced, and an interesting discussion on this matter is expected. To judge from the attitude of the majority of the members, some of whom have already expressed opinions, there is scarcely any doubt that *no revision* will be recommended.

I will endeavor to keep you informed in regard to all matters of general interest to the profession.

NETZAHUALCOYOTL.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of January 18, 1894.

The President, Dr. D. B. St. John Roosa, in the Chair.

Observations on Excessive Intestinal Putrefaction.—Dr. C. A. Herter read a paper with this title. The author stated that the facts brought to light two years ago regarding the occurrence of excessive intestinal putrefaction in epileptics had stimulated an inquiry into the occurrence and character of putrefactive processes in the intestine in other conditions than epilepsy. This inquiry, which had been carried on for two years, made it clear that deviations from the normal character and degree of putrefaction in the contents of the intestine were met with in association with a variety of morbid states. The objects of the paper were, first, to present the evidence as to the existence of putrefactive processes; second, to enumerate and discuss the clinical conditions in which putrefaction occurred in excess; and, third, to state the principles that should enter into the management of such cases.

It had long been known that a variety of aromatic substances, including indol, phenol, etc., were produced in consequence of the action of anaerobic bacteria upon proteids, and it was also known that this process of putrefactive decomposition occurred normally to some extent in the human intestine when nitrogenous food was introduced. In 1880 a very important fact was brought to light by Baumann—namely, that the various aromatic bodies, however formed within the intestine, were at last eliminated from the body (if absorbed) through the urine, almost exclusively in combination with sulphuric acid, in the form of ethereal sulphates. The ethereal sulphates therefore became an index of the amount of putrefactive products absorbed from the intestine, and the determination of their amount in the urine was the best indication we had as to whether the putrefactive processes were or were not in excess. This fact constituted the basis of the present investigation. For a full presentation of the evidence which had established this fact the reader was referred to the original article.

Careful observations had been made by the author, with the aid of an expert chemist, upon the ethereal sulphates in forty cases of epilepsy, eight cases of melancholia, eight cases of Bright's disease, and in a number of cases of anæmia, pernicious anæmia, leucocythæmia, catarrhal jaundice, exophthalmic goître, and many other diseases. In the case of epilepsy, about two thirds of the cases of *grand mal* showed distinct evidence of excessive putrefaction. In a few cases there had seemed to be a distinct relation between this excess and the occurrence of seizures, and in several there was a reduction in the number of attacks when the ethereal sulphates were reduced by treatment. The cases of melancholia showed a striking increase in the ethereal sulphates in five instances. The question arose in regard to such cases whether the excessive intestinal putrefaction might or might not be due, in some instances at least, to the partial starvation that existed in many cases, for it was now well known that inanition caused a great excess in the putrefactive products. In two cases of typical mania the sulphates had been normal. Six of the cases of chronic Bright's disease showed a marked increase in the sulphates. A considerable excess of the putrefactive products was found in many cases of simple anæmia, but in many the amount was normal.

From a study of many cases of intestinal indigestion the author had reached the conclusion that putrefactive excess was frequently present in these conditions. It was observed that there was often a close relation between persistent intestinal flatulence and the occurrence of indigo-blue, usually in moderate amount, in the urine. In many of these cases the indigo blue disappeared when the patient was put upon a suitable diet. It seemed probable that in such cases the over-production of indican depended on a condition of chronic catarrhal inflammation at some part of the intestinal tube, probably the duodenum. Many of the symptoms were related to the disturbances of nutrition that resulted in excessive elimination of uric acid, such excess being frequently found in intestinal indigestion associated with an excess in the ethereal sulphates, or with indigo blue, or existing by itself. It was probable that the symptoms depended to a large extent upon the action of the substances formed in the intestine during the putrefaction of proteids coincidently with the formation of the aromatic substances which were eventually excreted by way of the kidney.

The author deduced the following conclusions as a result of his investigations: 1. An excess of the ethereal sulphates in the urine was evidence of excessive putrefaction of proteids in the intestine. There were two exceptions to this statement: first, in the case of suppuration without free drainage; second, where certain drugs, such as creasote and salol, had been administered. 2. The indigo-blue of the urine was not necessarily proportional to the ethereal sulphates, and was to be regarded as due to a special form of putrefactive decomposition. 3. The regular occurrence of more than a trace of indigo-blue was to be regarded as pathological, although in robust persons there might be very little evidence of disordered digestion for a time. 4. The presence of indigo-blue in the urine of children was no evidence of the existence of a tuberculous process. 5. Intestinal flatulence was oftener associated with intestinal putrefaction than any other symptom of intestinal indigestion. Epigastric pain and tenderness, the sense of emptiness, and nausea, bore no relation to the ethereal sulphates. 6. Both constipation and starvation might increase the putrefactive products in the urine. 7. Epilepsy, acute melancholia, and chronic Bright's disease were usually associated with excessive intestinal putrefaction. 8. The treatment of excessive intestinal putrefaction by means of drugs was at present unsatisfactory. 9. The use of rare beef and of milk, and the exclusion, as far as possible, of vegetable nitrogenous food were important and effective means of reducing intestinal putrefaction and of relieving symptoms of intestinal indigestion. 10. The relief of intestinal symptoms could not be ascribed wholly to the effects of a milk-and-beef diet, for such diets reduced the excess of uric acid which was observed in many cases of intestinal indigestion. 11. The treatment of epilepsy by means directed to the intestinal condition led in many cases to a reduction in the number of the seizures and to marked improvement in the general health. 12. It was probable that in some cases of epilepsy in children the early seizures were determined by intestinal derangement, and that certain treatment directed to the correction of the putrefactive excess might greatly improve or even cure some cases of this kind, in the sense of preventing the establishment of the epileptic habit.

Dr. L. C. Gray said that he had been more than pleased to hear Dr. Herter's very original paper, and to find that so much was being done in the direction of determining what to do with that class of nervous diseases that came under no definite head. In regard to the treatment of such cases, the speaker's conclusions coincided with those of Dr. Herter, in that the remedies were very inadequate to cope with the condition. He had found that to correct the putrefactive changes in the intestine a combination of salol, bicarbonate of sodium, and pancreatin gave the best results. Where there were chronic disturbances of digestion and a diarrhœa had been set up, and where everything had failed, he had produced the best effect with calomel. Subgallate of bismuth also was beneficial. Rochelle salts, used in small doses continued over a prolonged period, acted well in disinfecting the intestine, the physiological effect on the capillaries being nearly the same as that of iron. He rather regretted, for his own information, that Dr. Herter had not given the amount of uric acid found in connection with intestinal putrefaction. In his own cases he had found that where patients were put upon a nitrogenous diet there was always an excess of uric acid. In regard to dietetic treatment for the nervous conditions arising from intestinal putrefaction, the speaker had been unable to obtain any good results.

Dr. C. L. Dana thought that Dr. Herter's scientific investigations had done much to stimulate the efforts of neurologists. His experience in the treatment of the class of cases described had not been very satisfactory. He had found in almost all the cases an excess of uric acid. He had adopted the method, as described some time ago by the author of the paper, for determining the indican in the urine. Putrefactive processes in the intestine caused one set of symptoms in children and another in adults—for instance, acquired neurasthenia was only present in the adult. The continuous investigation for the cause of neurasthenia could not help but be of ultimate benefit. Some years ago all such symptoms had been laid to uric acid, then to eye-strain, and now attention was being drawn to putrefactive changes in the intestine. A remedy that the speaker had found very effective in neurasthenic headaches, where everything else had failed, was naphthalin in doses of from sixty to eighty grains *per diem.*

Dr. W. H. Thomson was satisfied that much more could be learned of the functional nervous diseases from chemistry than from pathological anatomy, and that Dr. Herter's work was in the right direction. His experience with epileptics had been that before an attack the breath became foul and there was intestinal derangement with diarrhœa. Where the diet and intestinal condition could be corrected there was always a marked improvement in the character and number of the attacks and in the general health. In regard to intestinal antisepsis, there were very few drugs that could be depended upon. Salol was good, but it so frequently produced gastric disturbances that it could not always be used. Given in combination with benzoate of sodium, it gave the best results. He depended very largely upon bismuth in cases where there was much intestinal disorder, as in typhoid fever. It had been given continuously in the Roosevelt Hospital wards during the last siege of typhoid fever, with the result that in only one case had the diarrhœa been persistent. It could be combined to advantage with benzoate of sodium. One point which clinical experience had shown was that, so far, no diet list had satisfactorily corrected putrefactive changes in the intestine.

Dr. L. Emmett Holt said that there was one class of cases of patients that came under his notice suffering with undoubted intestinal indigestion. They were young children from one to four years of age with immense abdomens and generally rhachitic. These children had usually subsisted almost wholly upon a diet of carbohydrates, in the form of oatmeal. By placing them strictly upon a milk-and-meat diet, and excluding all starchy food, improvement was made rapid. The milk used was peptonized, and the meat in the form of rare beef scraped to a pulp. A dose of calomel was given every three or four days to correct any constipation that might be present. He found that children could bear the limitation of food necessary to correct intestinal putrefaction much better than adults.

Book Notices.

A Manual of Medical Treatment or Clinical Therapeutics. By I. Burney Yeo, M.D., F.R.C.P., Professor of Clinical Therapeutics in King's College, London, etc. With Illustrations. Vol. I. Pp. xiii–631. Vol. II. Pp. vi–744. Philadelphia: Lea Brothers & Co., 1893.

The author states that the object of this work is the study of disease from the point of view of treatment, a standpoint that is too often overlooked nowadays in the pursuit of researches in ætiology and pathology. Our first duty to our patients is to cure or to alleviate disease, and the successful physician is the one that best attains this goal.

As the author observes, it is clear that any or every part of the natural history of a disease may bear, directly or indirectly, on its treatment, and it would be most unphilosophical and unedifying to discuss the therapeutics of a disease without at the same time considering the true nature of the phenomena we are endeavoring to control. He has accordingly striven, wherever it was possible, to deduce rational indications for treatment from an examination of the pathological nature and the clinical course and characters of the disease under discussion.

In the compilation of his material Dr. Yeo has avoided the tedious digressions of footnotes, although he disclaims any intention of making his pages suitable for "rapid reference," but rather insists that they are intended for thoughtful consideration. The treatment of disease by "rapid reference" is alien to rational therapeutics, for the rational indications for the treatment of disease and the data for accurate diagnosis are not arrived at by such a method.

The first volume considers the treatment of diseases of the organs of digestion, of those of the heart and blood-vessels, of those of the blood and ductless glands, and of those of the organs of respiration. The second volume deals with pulmonary tuberculosis, diseases of the liver, diseases of the kidneys and urinary apparatus, diseases of the nervous system, and constitutional and specific infective diseases.

We note with some surprise the position the author takes regarding the value of the modern methods of investigating stomach diseases. His remarks regarding the usefulness of *lavage* are judicious. There should be extended reference to direct electrization of the stomach—a procedure that is often of more value than *lavage.*

In the article on typhoid fever Dr. Yeo properly insists upon the necessity of intestinal antisepsis, and his remarks on the cold-bath treatment are most commendable.

To most of the chapters the author has added a number of formulæ employed by well known physicians.

The excellent scope of this work will insure it a wide and increasing popularity.

The Uniform System of Accounts, Audit, and Tenders for Hospitals and Institutions, with certain Suggested Checks upon Expenditure, and Tender and Other Forms for securing Economy, and the Index of Classification. Compiled by a committee of hospital secretaries, and adopted by a general meeting of the same, 18th January, 1892. By Henry C. Burdett. London: The Scientific Press, 1893. [Price, 6s.]

In this volume Mr. Burdett gives much useful information regarding the methods of keeping hospital accounts, and the forms suitable for proposals for supplies. The specifications for the quality of supplies are so precise that they would be equally satisfactory to the contractor and to the steward. Hospital authorities will find this little volume very suggestive.

Essentials of Practice of Medicine. Arranged in the Form of Questions and Answers. Prepared especially for Students of Medicine. By Henry Morris, M. D., Late Demonstrator, Jefferson Medical College, Philadelphia, etc. With a very complete Appendix on the Examination of Urine, by Lawrence Wolff, M. D., Demonstrator of Chemistry, Jefferson Medical College. Colored (Vogel) Urine Scale and Numerous Illustrations. Third Edition, revised and enlarged by some Three Hundred Essential Formulæ, selected from the Writings of the most eminent Authorities of the Medical Profession. Collected and arranged by William M. Powell, M. D., Attending Physician to the Mercer House for Invalid Women at Atlantic City, N. J. Philadelphia: W. B. Saunders, 1894. Pp. xv–17 to 374. [Price, $2.] [*Saunders's Question Compends.*]

That three editions of this manual have been published is an evidence that it meets the wants of a number of students. Necessarily such a compend can not be exhaustive, but it seems that there should be some reference to acromegaly, arteriosclerosis, myxœdema, and parasitic diseases. It is not apparent why tuberculosis, a general disease, should be included among the diseases of the lung tissue. Errors are made in the statements that hæmorrhagic malarial fever "is very amenable to treatment," and that "if it is treated from the beginning the prognosis [of congestive malarial fever] is favorable"; both these fevers pursue a rapid course and usually terminate in death.

The therapeusis is sometimes antiquated; under the treatment of pneumonia, for example, the author makes no mention of the use of strychnine, apomorphine, or oxygen inhalations.

But, as a rule, the information contained in the volume is accurate as far as it goes.

Die Krankheiten der Mundhöhle, des Rachens und des Kehlkopfes. Mit Einschluss der Untersuchungs- und Behandlungsmethoden. Für praktische Aerzte und Studirende. Von Dr. Albert Rosenberg, 1. Assistenten an der Universitätspoliklinik für Hals- und Nasenkranke in Berlin. Mit 178 Abbildungen und einer lithogr. Tafel. Berlin: S. Karger, 1893. Pp. x–329. [Preis, M. 8.]

The author divides his work into three sections, the first being devoted to the diseases of the mouth, the second to the diseases of the pharynx, and the third to the diseases of the larynx. It has been his aim to provide a work that would give the most recent knowledge of the ætiology, symptoms, diagnosis, prognosis, and treatment of each of the principal diseases of these parts. The scope of the volume is essentially practical and the book may be commended as a safe guide to the student and physician.

The Healing of Rodent Cancer by Electricity. By J. Inglis-Parsons, M. D., M. R. C. S., M. R. C. P. (Lond.), etc. London: John Bale & Sons, 1893. Pp. vii–82. [Price, 5 shillings.]

Those familiar with the author's published papers on the treatment of neoplasms by strong alternating galvanic currents will recall his theory that a local sore or tissue subject to chronic inflammation and irritation may become malignant in consequence of a constitutional defect or want of control by the nervous system over the active proliferation of cells that takes place during the reparative process. If this theory is correct, it is remarkable that ulcers of the leg do not more frequently become malignant.

The author, however, is prepared to accept the parasitic theory that has recently been exploited as an explanation of the cause of neoplasms. We agree with him in believing that either of these theories is more satisfactory than Cohnheim's inclusion theory.

The method of operating for the galvanic treatment of rodent ulcer is to anæsthetize the patient, introduce two platinum-pointed insulated needles into the tissue of the neoplasm, and turn on the current for a few seconds, increasing its intensity until, if necessary, five hundred milliampères are attained. The current is alternated and the position of the needles is changed so as to effect as great a destruction of tissue as is possible. The operation should not last as long as an hour, and in the case of small tumors it may be completed in a few minutes. The advantages of electricity are that it causes no pain, sensation being abolished in the ulcer for several days after the application; and there is no hæmorrhage.

The author has found that a year's immunity can always be promised, with probability of a longer period, even in bad cases. The method seems to be a valuable addition to our remedial resources.

Ophthalmic Nursing. By Sydney Stephenson, M. B., F. R. C. S. Edinburgh. With Sixty-one Illustrations. London: The Scientific Press, 1894. Pp. xii–188. [Price, 3*s.* 6*d.*]

This is a very good book for a nurse who is about to engage in ophthalmic nursing. It furnishes an outline of ophthalmic work and of the services required from the nurse, so that after reading it she can enter upon her work with a certain amount of understanding. But it furnishes simply an outline, which can be filled in only by practical experience; it can not be relied on to educate a nurse so as to make her competent to assume the care of diseased eyes. If this is understood, the book is a valuable one to place in her hands.

BOOKS, ETC., RECEIVED.

A Text-book of the Physiological Chemistry of the Animal Body, including an Account of the Chemical Changes occurring in Disease. By Arthur Gamgee, M. D., F. R. S., Emeritus Professor in the Owens College, Victoria University, Manchester, etc. With Two Chromo-lithographic Charts by Spillon and Wilkinson. Vol. II. The Physiological Chemistry of Digestion. London and New York: Macmillan & Co., 1893. Pp. xix–4 to 528. [Price, $4.50.]

Outline of Physical Diagnosis of the Thorax. By Arthur M. Corwin, A. M., M. D., Demonstrator of Physical Diagnosis in Rush Medical College, etc. Chicago: The W. T. Keener Company, 1893. Pp. viii–9 to 111.

The Technique of Post-mortem Examination. By Ludvig Hektoen, M. D., Pathologist to the Cook County Hospital, Chicago, etc. With Forty-one Illustrations. Chicago: The W. T. Keener Company, 1894. Pp. viii–172. [Price, $1.75.]

Climates of the United States, in Colors. Popular Edition of Denison's Charts, with Additions. By Charles Denison, A. M., M. D., Denver, Col., Professor of the Diseases of the Chest and of Climatology, Medical College, University of Denver, etc. Designed for the use of Physicians, Tourists, Health Seekers, Farmers, and Schools. Chicago: The W. T. Keener Company, 1893. Pp. 47. [Price, $1.]

Relation d'une épidémie de choléra. (Étude clinique et expérimentale.) Par MM. A. Mairet, professeur de clinique des maladies mentales et nerveuses, et F. J. Bosc, chef de clinique des maladies mentales et nerveuses à la Faculté de médecine de Montpellier. Avec 4 planches et 11 tracés dans le texte. Montpellier: Charles Boehm, 1893. Pp. 6–98.

Spinal Curvature. Description of a new Form of Apparatus in Special Relation to the Necessity and the Nature of Mechanical Support for the Spine. By C. G. Gumpel, Orthopædist. London: T. Pettitt & Co., 1892.

Atony of the Stomach. By Julius Friedenwald, A. B., M. D., Baltimore. [Reprinted from the *Medical News*.]

A Case of Ankylostomiasis. By W. L. Blickhahn, M. D., St. Louis. [Reprinted from the *Medical News*.]

The Actions and Uses of Pental. By David Cerna, M. D., Ph. D., Galveston. [Reprinted from the *Medico surgical Bulletin*.]

The Pilgrimage and Civilization of the Toltecs. By David Cerna, A. M., Ph. D., Galveston. [Reprinted from the *Transactions of the Texas Academy of Science*.]

Establishing a New Method of Artificial Respiration in Asphyxia Neonatorum. By J. Harvie Dew, M. D., New York. Read before the New York Academy of Medicine, February 2, 1893. [Reprinted from the *Medical Record*.]

Transactions of the American Ophthalmological Society. Twenty-ninth Annual Meeting, New London, Conn., 1893.

State Board of Health. Report of Willis G. Tucker, M. D., Ph. D., Director State Laboratory. [Extract from the *Twelfth Annual Report*.] 1891.

State Board of Health. Report of Willis G. Tucker, M. D., Ph. D., Director State Laboratory. [Extract from the *Thirteenth Annual Report*.] 1892.

Ninth Annual Report of the Adirondack Cottage Sanitarium, Saranac Lake, New York. November, 1893.

Report of the Health Department of the City and County of San Francisco for the Fiscal Year ending June 30, 1893.

New Inventions, etc.

A NEW SPECULUM.

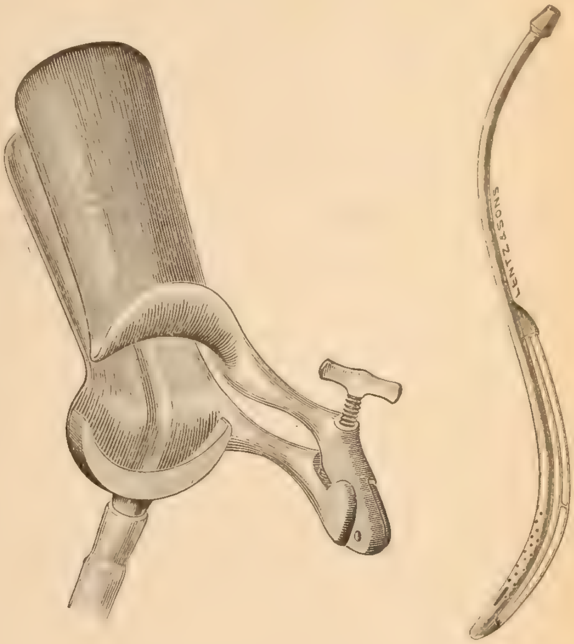
By Frank W. Talley, M. D.,

INSTRUCTOR IN GYNÆCOLOGY IN THE PHILADELPHIA POLYCLINIC.

The value of the copious use of water in the treatment of granulating wounds and of catarrhal diseases of the mucous membranes has long been appreciated by surgeons and by those who treat diseases of the nose and throat. Ulcers heal more speedily if they be washed with warm water at each dressing; and who would apply an alterative solution to a catarrhal nasal membrane without first having cleansed the surface of its altered secretions? For the successful treatment of uterine and vaginal conditions also the use of water is valuable.

In order that water may be freely used in the office treatment of gynæcologic patients without fear of wetting the clothing, I have had a funnel speculum made for me by Messrs. Charles Lentz & Sons, of Philadelphia. The instrument is a bivalve, hinged with a take-off joint and provided with a single screw for separating the blades. The blades are broader at the cervical end than at the vulvar end, overcoming the tendency for the instrument to slip out when used in relaxed vaginas and providing for a better exposure of the vault of the vagina. At the vulvar end the blades are considerably flanged, preventing the instrument from slipping too far into the vagina, when the vulva is enlarged by tears of the perinæum and protecting the vulva during the introduction of tampons from being soiled by the remedies with which they are smeared. The lower blade of the speculum is guttered and terminates at its vulvar end in a funnel, by which fluids may be conveyed through a rubber tube to a receptacle placed at the foot of the table or chair.

A speculum with a similar provision for conducting away fluids has been described by Dr. Davis in the *New York Medical Journal* for November 4, 1893. I can claim priority, however, having exhibited my speculum before the Philadelphia Obstetrical Society at its regular meeting held November 2, 1893, two days before the publication of Dr. Davis's paper.



It is my routine practice in the office treatment of my patients after inserting the speculum to wash the cervix and vault of the vagina with a stream of warm alkaline solution from a fountain syringe suspended upon the screen at the side of the examining table. The solution used consists of two drachms of sodium bicarbonate and thirty minims of carbolic acid to the quart of water at a temperature of 100° F. After all the mucopurulent discharges have been dissolved and washed away, the cervix and vaginal vault are dried with a few bits of absorbent cotton and a clean surface is afforded for the reception of the remedies used. Should it be desirable to scarify the cervix, the stream of warm water will favor a greater depletion and the blood will be carried away with the water into the slop jar below.

I believe that the speculum will greatly add to the convenience of treatment of these cases. The rim of the funnel has been so constructed as not to occlude the lumen of the instrument, and the addition does not materially add to its weight. The instrument may therefore be used whenever a speculum is needed.

1234 Spruce Street.

Miscellany.

Disorders of the Menopause and their Treatment.—M. Eloy, writing in the *Revue générale de clinique et de thérapeutique* for December 23d, remarks that the part played by the change of life has hardly been adequately treated of in general pathology. At the present day we hear less of it than ever, but that does not do away with a good deal being said about the management of the disorders incident to that time of life.

Every practitioner is now and then consulted on the subject. He has to give very precise instructions in order to put his patient on her guard against the exaggeration of popular prejudices. Sometimes the condition of things is obscured, but it must be elucidated. Recent clinical works, among which are those written by Elliot in England, Jacobs in Belgium, and others in France and elsewhere, have drawn attention anew to this old question of practice. There is therefore an opportunity of drawing a therapeutical lesson truly useful to practitioners. One point seems to have been thoroughly made out; it is admitted that there is such a thing as a treatment of the menopause. It is preventive and curative of the accidents pertaining to it. It is a general treatment. Like any other, it should be hygienic primarily, and symptomatic as occasion requires.

The Hygienic Treatment of the Menopause.—So far as this is concerned, there is a perfect agreement between clinicians and physiologists. We have to take into account the diet, physical exertion, and the clothing. It may seem commonplace thus to enumerate these things, but it is useful. Sobriety in everything, according to Jacobs, is the moral principle that should inspire a woman at the change of life. As regards diet, physicians should advise in general white meat, eggs, milk, vegetables, and drinks but moderately alcoholic, pure water or wine diluted with water. The patient should avoid hearty meat, culinary refinements, coffee, tea, and stimulants. But this broad and vague prescription is not enough; we should take into account the old idea of temperament, although at the present time this idea is not very definite. To the plethoric a rather innutritious diet should be given: leguminous vegetables, white meat, and fruit; to the lymphatic, on the other hand, a sustaining and substantial diet: dark meat, fish, and generous wines in preference to milk and starchy articles of food.

The *hygiene of sleep* should consist in devoting only eight hours of repose to the plethoric and in combating the well-known tendency of lymphatic persons to sleep late. Jacobs advises them to rise early and to sleep on a moderately soft bed.

As regards physical exercise, for the plethoric we may recommend a walk after eating and for the lymphatic after bathing, in order to excite lively reaction; for nervous persons we should prescribe a daily course, sufficiently long, of walking and exercise. In the matter of dress, flannel should be employed for the plethoric, and for others lighter articles. Of course, regard is to be paid in this matter to variations of temperature; the clothing should be warm in winter and light in summer. The chemise should be of cotton rather than of linen; there should be only moderate lacing or none at all if there is a disposition to fleshiness, and the patient should wear shoes that are light but sufficient to protect the feet from dampness and chilliness. Hygienists deprecate chilling at the time of the menopause; it seems that cold is, as it were, the chief pathogenic factor of the complications that may arise. To sum up, the preservation of health at this period of life depends on the proper course of diet, hydrotherapeutics, graduated physical exertion, and gymnastics.

Jacobs urges the avoidance of excess in sexual intercourse. He remarks that it gives rise to debility and to local troubles, such as menorrhagia. After the critical age is passed, however, more freedom may be allowed.

Treatment of the Accidents of the Menopause.—The best-known of these are chlorosis, neurasthenia, and nervous and gastro-intestinal troubles. The chlorosis of this period was called by Canstatt "chlorosis of involution"; according to M. Germain Sée, it is anæmia dependent on the hæmorrhages or the affections of the heart that are common at this age. M. Hayem, however, has pointed out that this interpretation, although sometimes exact, is not always so. There are cases in which, independently of casual causes, this anæmia excited by the menopause is a return to the chlorosis that the patient had previously been a subject of at the time of puberty. This statement is justified by clinical observation. Prominent with chlorosis are dyspeptic symptoms at the time of the menopause. The variety of these gastro-intestinal troubles is well known. At the time of the menopause a woman readily becomes chlorotic as the result of digestive disorders. Therefore, before prescribing iron or arsenic, the judicious physician will treat the stomach and intestines.

Loss of appetite is to be treated with tonics and bitters, such as nux vomica, gentian, etc. They should be given before eating and in the form of tincture. Of a mixture of equal parts of tincture of nux vomica and tincture of anise, from ten to fifteen drops may be taken before eating. Another prescription is: Three parts each of Hoffmann's anodyne, tincture of anise, and tincture of rhubarb, and one part of tincture of nux vomica. Potain recommends twenty drops of this in a little water before meals. In case of flatulence it may be preferable to prescribe powders, such, for example, as the following, recommended by Hérard: Powdered nux vomica, fifteen grains; powdered rhubarb, a drachm; chalk, forty-five grains; elæosaccharum of mint, a drachm. This is to be divided into twenty powders, one of which is to be taken before each meal. If there is dyspepsia it will be found that there is a deficiency of gastric juice; in that case Huchard's mixture may be prescribed—namely, hydrochloric acid, thirty drops; syrup of bitter-orange peel, an ounce; melissa water and linden water, each, two ounces. Of this a tablespoonful is to be taken after eating.

Another common accident, constipation, calls for particular notice. Coprostasis is to be prevented, for the purpose of avoiding intestinal self-poisoning, which has been shown to play an important part in the genesis of diseases characterized by faulty nutrition. One action of the bowels should be produced every day. As a laxative, aloes retains its faithful partisans; aloin conjoined with strychnine, a purgative with a tonic, is recommended by Elliot. A pill containing 0·15 of a grain of aloin and 0·075 of a grain of strychnine sulphate may be given once or twice a day. According to MM. Dujardin-Beaumetz and Huchard, senna is best given in the following mixture: Senna leaves, washed in alcohol and powdered, and sublimed sulphur, each 90 grains; powdered fennel, powdered star anise, and powdered cream of tartar, each forty-five grains; powdered licorice, 120 grains; powdered sugar, 375 grains. Of this a dessertspoonful or a soupspoonful may be taken every evening in half a glass of water.

If there are disorders of the heart, the following prescription is recommended by M. Huchard: Powdered digitalis leaves, squill, and scammony, each seventy five grains; syrup of gum, a sufficient quantity. This is to be divided into a hundred pills, of which from two to five may be given daily. If there is congestion of the liver, the following capsules will be found more energetic as laxatives: Potassium sulphate, cream of tartar, and potassium nitrate, each ninety grains; powdered digitalis leaves, fifteen grains; to be divided into twenty capsules, of which one or two may be taken daily.

The gastralgia of the menopause does not differ in its treatment from gastralgia under other circumstances.

As regards the administration of iron and arsenic, how should the first of these be administered? If there is reason to fear digestive derangements, by combining its use with that of hydrochloric acid. The preparation of iron is to be taken in the course of a meal, and that of the hydrochloric acid at the termination of the meal. If there is want of appetite, the iron is to be associated with a bitter tonic; about a fifth of a grain each of iron protoxide and powdered calumba may be given in a capsule. Therapeutists are somewhat at variance in regard to the choice of preparations of iron. The protoxalate, in daily amounts of from a fifth to a quarter of a grain, is to be recommended on account of its solubility and the rapidity with which it is absorbed. It is an eligible preparation of iron, and may be taken before each of the two principal meals. Its use should be begun in small doses, which may be increased gradually. In gastralgic chlorosis we may have recurrence to iron and potassium tartrate. Here are two good prescriptions, the first of which is rather indicated by gastralgic chlorosis, and the second if there is constipation with absence of fever: 1. Iron and potassium tartrate, 150 grains; extract of gentian, 120 grains; extract of nux vomica and extract of opium, each 4 grains. This is to be divided into a hundred pills, two to be taken before each meal. 2. Extract of nux vomica, 8 grains; extract of cinchona, extract of gentian, extract of rhubarb, and iron and potassium tartrate, each 75 grains; oil of anise, 5 drops; glycerin, a sufficient quantity. This is to be divided into a hundred pills, two to be taken at the beginning of each meal.

Arsenic increases the production of red globules. Moreover, it stimulates nutrition, so that it is particularly applicable in the very pronounced forms of anæmia. It should therefore, as Luzet has pointed out, be considered not as a substitute for iron, but as an adjuvant. For this reason it is indicated in the chlorosis of the menopause, in the form of arsenical mineral water. We may give the waters of La Bourboule, Plombières, and Mont-Dore, Fowler's solution and Pearson's solution, or the following pills: Sodium arsenate, a grain and a half; glycerin, a sufficient quantity; extract of gentian and extract of cinchona, each 150 grains. To be divided into a hundred pills, of which two may be taken before each of the principal meals. The remedy may be used in the form of powder, combined with iron and bitters, as in Elliot's arsenio-ferrated capsules, each of which contains 0·0015 of a grain of arsenious acid, eight tenths of a grain of aloes, one third of a grain of powdered nux vomica, and a grain and a half of reduced iron. Two of these may be given in the course of twenty-four hours. The arsenical treatment should be discontinued at the end of a month or six weeks, but may be resumed subsequently after a long period of abstention.

With the restoration of the nutrition, any nervous derangement that may have been present will doubtless have been alleviated. Nevertheless, we may have to give special attention to sleeplessness and nervous irritability; for this bromides, especially sodium bromide, are appropriate. If there are phenomena of depression or of a neurasthenic condition, recourse may be had to phosphorus, in the first place, and subsequently to the phosphides. In England, where the use of phosphorus is in greater vogue than in France, Elliot advises beginning with pills each of which contains 0·008 of a grain of phosphorus and 0·15 of a grain of extract of nux vomica, one daily. Later on he prescribes zinc phosphide in the form of pills each containing from 0·30 to 0·45 of a grain of phosphide and 0·15 of a grain of nux vomica, one to be given daily. Finally, there is the resort to hypodermic injections of artificial serum and even of the testicular extract according to Brown-Séquard's method. Undoubtedly the organic extracts will not cure the accidents of the menopause, but it is quite certain that they will contribute to allay its nervous derangements by improving the nutrition. They may usefully precede or succeed the physiological action of hygienic and medicinal measures.

Luke, the Christian Physician of Antioch.—In the December number of the *Glasgow Medical Journal* there is the following translation from Professor A. Harnack's *Medicinisches aus der ältesten Kirchengeschichte*, Leipsic, 1892:

In the Apostle Paul's Epistle to the Colossians (iv, 14) we read: "Luke, the beloved physician, greets you." In the epistle to Philemon (verse 24), written from Rome at the same time, the Apostle calls him his "fellow-laborer"; and in the last writing of Paul's which we possess he says: "Only Luke is with me" (2 Tim. iv, 11).

Luke, the first physician whom we know to have been a Christian, took a prominent part as Paul's "fellow-laborer" in the spread of the Gospel. Church tradition ascribes to him the third Gospel and the Acts of the Apostles, and much may be alleged in favor of this report. Both these books, which form a considerable part of the New Testament, have undoubtedly been written by a highly-cultured Greek, by one who worked with the greatest accuracy as regards the sources from which he derived his information, who thoroughly understood the rules of the science of history, and who wrote in an excellent style. There are also to be found in both works passages which would seem, both from the interest and the knowledge which they display as regards medicine, to point to a physician as their author;* indeed, it has even been asserted that the preface to the third Gospel is formed after the pattern of the preface to the *Materia Medica* of Dioscorides.† It is certain, at any rate, that in no other Gospel is the activity of Jesus as the healer both of soul and body so earnestly brought into prominence and so lovingly described as in the third Gospel.‡ The Acts of the Apostles also concludes with an address by Paul, in which, on the basis of an Old Testament quotation, God is spoken of as the physician who has abandoned the Jews and exercised his healing power exclusively on the heathen.#

According to a tradition reaching back to the second century, Luke took part in the composition of yet another of the New Testament Books—viz., the Epistle to the Hebrews. In recent times Delitzsch has come forward to support this idea. He writes:‖ "That Luke was by profession a physician is strikingly in keeping with the construction of the epistle; for this epistle contains, so to speak, an anatomical (iv, 12), a dietetic (v, 12–14), and a therapeutic passage (xii, 12)." A striking idea, quite like those of the late Leipsic scholar, but of no value whatever as a proof! That Luke was the author of the Epistle to the Hebrews is merely an unauthenticated tradition, having its origin in the difficulties of the subject and the speculations of the learned.

Reasons have also been brought forward, which are worthy

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* Eusebius says in his *Church History*, iii, 4: "Luke, a scientific physician, bequeathed to us two books in demonstration of the science of soul healing which he had learned from the apostles."

† *Lagarde*, *Psalterium iuxta Hebr. Hieron.*, p. 165; compare also *Mittheil.* III, S. 355. [The following is a translation of the first sentence referred to. Dioscorides is assigned to the first or second century A. D.: "Following many others, including not merely ancient, but recent authors also, who have written concerning the preparation of medicines, and their powers, and their use, we also, O dearest Areus, will try to show to thee that this matter has been taken up by us after due consideration and with no small amount of study: because some of them have not thoroughly elucidated the subject, and others of them have treated it merely historically."]

‡ It must also have been noticed that the third evangelist has endeavored to draw a distinct line between the process of exorcising and the curing of "natural" diseases, both as regards their description and the methods used in curing them. See Campbell, *Critical Studies in St. Luke's Gospel*, Edinburgh, 1891 (known to me only through J. Weiss, *Theol. Lit.-Ztg.*, 1892, No. 3).

Acts of the Apostles, xxviii, 26–28. The two following verses contain only an appended historical notice.

‖ *Comment. 2 Hebräerbrief*, S. 705.

of consideration, against the idea of his being the author of the Gospel and the Acts of the Apostles. The fact, however, of his being that companion of Paul who wrote the description of the voyage from Cæsarea to Puteoli and the shipwreck (Acts of the Apostles, xxvii *et seq.*) is beyond dispute. The accuracy and trustworthiness of the description are marvelous. Those who have studied the naval affairs of the ancients consider that in the whole range of antiquity we hardly possess another account so rich in respect of acuteness of observation and clearness of statement regarding nautical matters as this account by the physician Luke.

If Luke be the author of the third Gospel, then we have among the four evangelists, according to report, not only a "theologian," John, who bears this title of honor, but also a "physician"; Mark, as the interpreter of Peter, would be the "philologist"; and the publican Matthew would require to see if he could find a place among the "lawyers." The four evangelists have been compared to every imaginable thing in the world that is fourfold and forms a *universitas*—to the four quarters of the globe, the four winds, the four cherubim, etc. I know not whether in these comparisons, which were at one time taken quite seriously, any one hit upon the four faculties, but I should be astonished if such were not the case. We do not think much of these matters now, and least of all of the union of the four faculties, which has become somewhat loosened and is in general not so likely to occur to the mind readily nowadays.

It rests on good authority that Luke came from Antioch and was a member of the earliest of the Gentile Christian Churches.[*] Anything further, however, that tradition has to tell of him does not appear till later on, and is not authentic; he is said to have labored in Achaia and Bœotia, in Dalmatia, Gaul, Italy, Macedonia, in Alexandria also, and so on. Some give an account of a martyrdom which he suffered in Thebes in Bœotia; others say Petrea or Ephesus. Out of the multiplicity of legends[†] let us give prominence to the pleasing one, that, on the grave of the saint in Thebes, there rained down pastilles or biscuits endued with healing power, and in this way the forgotten grave was discovered—probably a Bœotian local report got up by a speculative priest, who brought as an offering some small cakes in order to procure for his people a sacred shrine, and gain reputation and money for his church.

Not until very late—viz., in the sixth century[‡]—appeared the information that Luke was not only a physician, but also a painter; but, as is so often the case, the later false legend nearly supplanted the ancient true tradition. The painter Luke soon eclipsed the homely physician. Nowadays Luke is recognized throughout the whole Eastern Church principally as a painter. He became a painter because people wished to have "genuine" pictures of the Virgin Mary, and Luke was the evangelist who had given the most exact description of the mother of God. The tradition that he had been a physician was not, however, at that time intentionally suppressed. True, the heretic Marcion, a celebrated man, though without followers, tried to do this as early as the second century. Marcion would recognize no physician among the apostolic heroes, because in his overflowing Christian enthusiasm he held it as unchristian to busy one's self about the human body. Thus in the Epistle to the Colossians he struck out the words "the beloved physician" standing beside the name of Luke. But this Christianity, in opposition to Nature, which was a revisal even of the old records, was rejected by the Church at large; Luke continued to be to her "the beloved physician," and, as such, the living token at the same time that Christianity and medical science can well be combined. Even in the history of the Church, however, there have been times when all natural science and medicine were almost condemned as profane learning. At such times it was of no little value for her to remember that in the New Testament there appears a "beloved physician," and that he is the historian of the Virgin Mary and of the Lord, of Peter and of Paul. Thus the physician Luke has carried on, even after his death, a quiet but powerful mission. He has protected in the Church his science of healing, and triumphantly averted from the Catholic Church the final consequences of a Christianity opposed to Nature.

Galvanization of the Brain.—Dr. Hobart Amory Hare, of Philadelphia, professor of therapeutics in Jefferson Medical College and editor of the *Therapeutic Gazette*, contributes to the December number of that journal an article entitled, Is there such a thing as Galvanizing the Brain? He begins by referring to a paper that had been read before the section in neurology of the First Pan-American Medical Congress, on the treatment of the meth-apoplectic state, in which the author had maintained that marked improvement in the paralysis followed the application of galvanism to the head, one pole being placed on the occiput and the other on the forehead. The idea was, says Dr. Hare, that by this means the current passed from pole to pole through the substance of the brain and so modified its nutrition that the apoplectic injury was modified favorably. He then refers to the fact that in the discussion which followed he had emphatically expressed the belief that the current never passed through the brain under such circumstances, but by the path of least resistance—namely, through the scalp from pole to pole. While some of those present had agreed with him, the majority had felt convinced that the current did pass through the brain substance, and instances have been cited in which undoubted improvement in motility had followed this method of treatment, and in which marked symptoms had been produced in healthy persons by the application of the poles to the two temples. Referring to the general recognition of the fact that electricity always flows in the direction of least resistance, Dr. Hare relates the following experiment: The positive pole of a battery was applied to the occiput of a large dog and the negative to its forehead and a milliampèremeter placed in the circuit. It registered 5·75 milliampères, and the dog was trephined. While the milliampèremeter was used in the circuit a needle thoroughly insulated except at its tip, and connected with one of the poles, was inserted into the substance of the brain. The milliampèremeter now registered 3·75 milliampères. In other words, says Dr. Hare, the resistance to the current when one of the poles was bare metal and in the middle of the brain was greater when the current had to pass through a wet sponge, bone, membranes, and the scalp than when it had to pass from pole to pole by the scalp. If this was the case, he asks, how much greater must the resistance be when the current has to pass through both sides of the skull instead of only one side, as in the experiment? If the current passed through and through, the subject would be thrown into a convulsion by excitation of the motor cortex every time the current was made or broken, and any one, continues Dr. Hare, who has applied the feeblest test to this motor area will appreciate the fact that very powerful motor impulses are excited by this means. The author does not deny that benefit follows the therapeutical application of galvanism to the head, but his object is to point out that the benefit must be obtained indirectly and not by the direct action of the current on the cranial contents.

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[*] *Eusebius*, iii, 4; *Quæst. ad Steph. Nova Patr. Bibl.*, iv, 1, p. 270; *Hieron. de vir. inl.*, 7. The information probably reaches back to Julius Africanus, and perhaps the other statement also, that he was better acquainted with the Greek learning than with the Hebrew.

[†] S. Lipsius, *Apokr. Apostelgesch.*, ii, 2 S. 354 *et seq.*, who has collated and sifted these legends with marvelous diligence.

[‡] Theodorus Lector (*Valesius*, *Mogunt.*, p. 551).

Ethyl Bromide as a General Anæsthetic.—The December number of the *Medical Reporter*, published in Calcutta, contains an abstract of an article contributed to the September number of the *Revue de chirurgie* by Hartmann and Bourbon, who have come to the following conclusions from an extensive experience in the administration of ethyl bromide as a general anæsthetic: It is very important to use the pure drug, and particularly to distinguish between ethyl bromide and ethylene bromide. The use of ethylene bromide is not free from danger, and the bad effects often caused by it have been unjustly attributed to ethyl bromide. When properly administered, ethyl bromide is a very convenient, rapid, and safe anæsthetic. The patient recovers very speedily and does not suffer from any unpleasant feeling. As it causes cephalic congestion, it should not be given while the patient is sitting; and as it can not be administered for a long time with safety, it is not to be used in prolonged operations; in such cases it may be used at first and the anæsthesia continued with the use of chloroform. This method has the advantage of shortening the period necessary for rendering the patient insensible, but does not preclude the possibility of syncope. Ethyl bromide causes an unpleasant odor of the breath for two days after its inhalation, but this is not usually perceived by the patient himself.

Lucas-Championniere's Antiseptic Powder.—The *Union médicale* for December 30th gives the formulæ of a number of preparations of iodoform mentioned by M. Terrier in his course on operations and dressings. Among them is that of a powder attributed to Lucas-Championnière, consisting of equal parts of iodoform, powdered benzoin, powdered cinchona, and carbonate of magnesium, and a little oil of eucalyptus. It is said that in this mixture the odor of iodoform is masked.

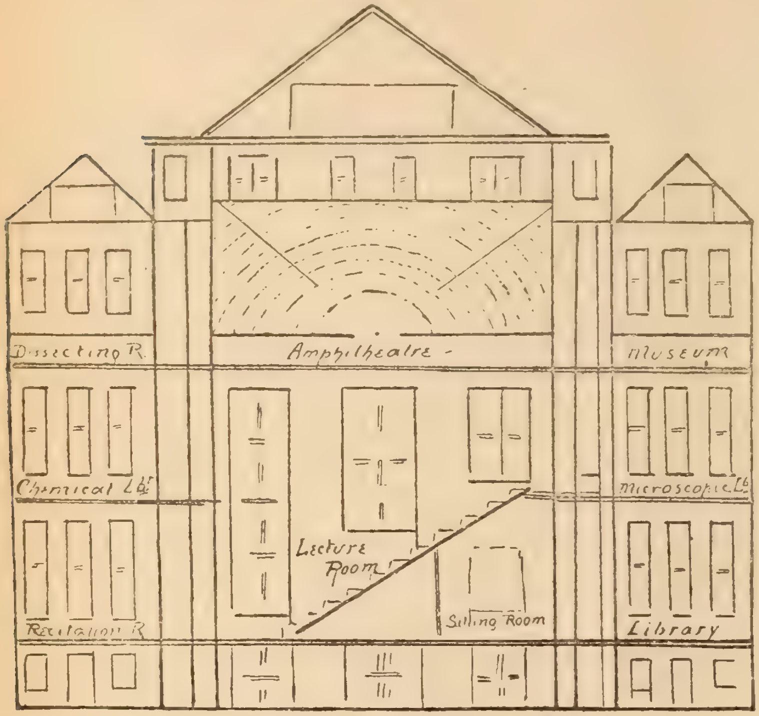
Pseudo-insufficiency of the Aorta.—At a recent meeting of the *Gesellschaft für innere Medicin*, of Berlin, reported in the *Mercredi médical* for December 21, 1893, Dr. Fürbringer stated that several years ago he had attended a patient who had presented all the symptoms of aortic insufficiency, except the souffle. At the autopsy degeneration of the aortic valves was found. Since that time Dr. Fürbringer had met with several identical cases out of the three hundred cases of aortic insufficiency which he had observed; but in another group he had found cases where the souffle was intermittent and disappeared for a time. This disappearance was attributed to the condition of the blood pressure, but it must be understood that this disappearance of the souffle sometimes persisted when the patient was at rest. Dr. Leyden had observed a certain number of cases of acute rheumatism followed by signs of aortic insufficiency, but with a systolic souffle. Dr. Litten had never observed any patient with aortic insufficiency, verified at the autopsy, without finding that during life he had had the souffle at the base of the heart. Relative aortic insufficiency, where the dilatation of the valvular opening was not in proportion to the degree of constriction, was to be distinguished from pseudo-insufficiency.

The Use of Colchicum in the Chronic Rheumatism of Children.—In the *Revue générale de clinique et de thérapeutique* for December 27, 1893, M. Jules Simon is credited with the opinion that this remedy is the most efficacious. He prefers it to iodide of potassium and follows its use by that of tonics, such as arsenic, hæmoglobin, and phosphates, together with dieting. The following method of administration is advised: An hour before dinner, every day, take ten drops of tincture of colchicum and continue this for eight days, when it is best to allow a week to pass before resuming the treatment, which is then to be continued until recovery is completed. Colchicum rapidly diminishes the swelling of the joints, but does not affect the general condition so quickly. The use of it can be alternated with that of iodides, so that the treatment then becomes a mixed one.

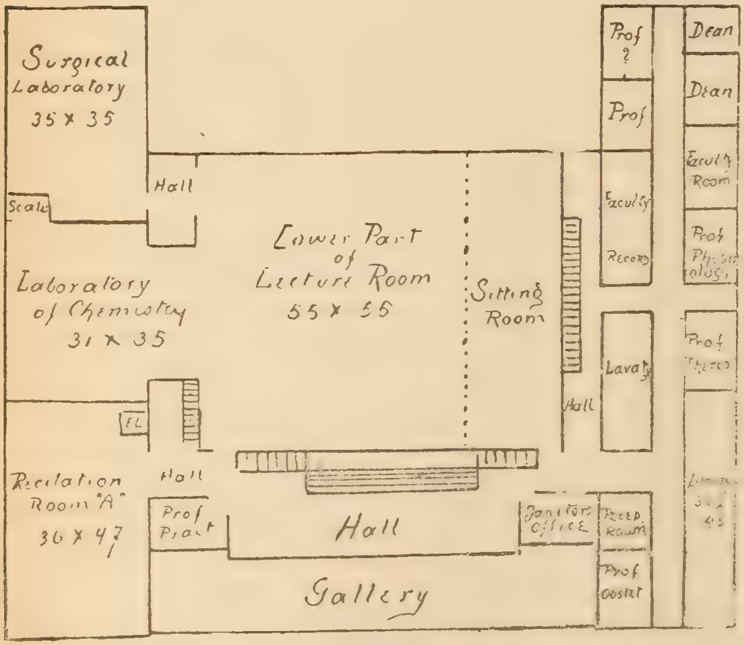
A Simple Stamp of Sterilization.—The *Revue générale de médecine, de chirurgie et d'obstétrique* publishes an abstract of an article by Dr. H. Hochenegg, which appeared in the *Wiener klinische Wochenschrift*, 1893, No. 23. The author begins by asking how one may satisfy himself that articles of dressing have been sterilized. He makes use of a yellowish-brown coloring matter which has the property of becoming bright red on exposure to the temperature of boiling water. This coloring matter is applied to certain parts of the articles that are to be sterilized. If the sterilization has been done effectively and satisfactorily, spots that were yellow have become red, and all mistakes are avoided. The coloring matter consists of a mixture of a hundred and fifty parts of the solution of aluminum acetate of the Austrian Pharmacopœia, a hundred and fifty parts of fountain water, and five parts of a twenty-one-per-cent. paste of alizarine. The mixture is to be shaken before it is used, and with it one of the surfaces of the article is to be painted. In the cases of compresses and the like the date of the sterilization is to be written in one corner with the coloring matter. The red color of the date bears witness that the sterilization has been accomplished efficiently. This process is at once very simple, very practical, and cheap.

The Medicinal Treatment of Typhlitis.—The *Revue générale de clinique et de thérapeutique* for December 6th gives a summary of M. Grasset's views on this subject. The therapeutical indication, he says, varies accordingly as there is an actual acute inflammatory attack, or as the case is one of recurrent typhlitis between the attacks, or as there is typhlitis with persistent cæcal engorgement. In the last-named case medicinal treatment usually fails, and an appeal to the knife becomes a necessity. In the case of a recent typhlitis with acute exacerbations the physician may treat the appendicular colic, combating the pain with warm baths, evacuating the intestinal contents, and, if possible, resolving the inflammation. M. Grasset fulfills these various indications as follows: 1. He gives a full warm bath of from half an hour to an hour in duration. 2. Every hour the patient is to take a teaspoonful of a purgative potion, consisting of one part each of castor oil and oil of sweet almonds and two parts of syrup of lemon, until a copious evacuation of the bowels has been produced. 3. The iliac region is to be anointed with an ointment consisting of mercurial ointment and belladonna, and this is to be followed by the application of a large, hot, thin poultice of linseed meal. In very stubborn cases M. Grasset adds to the purgative potion a drop of croton oil. In cases of recurrent typhlitis the treatment during the intervals consists in preventing overloading of the intestinal canal and in the use of antisepsis, revulsives, and resolvents to the seat of inflammation. For this purpose he advises: 1. A diet that leaves little residue. 2. Every week the application of the actual cautery to the painful and infiltrated region; also every day, or as often as may be necessary, frictions with an ointment containing belladonna. 3. To overcome constipation, at bedtime a laxative pill, consisting of one sixth of a grain each of powdered belladonna, extract of belladonna, and podophyllin. 4. The insurance of intestinal antisepsis by taking before and after each meal a capsule containing seven or eight grains of benzonaphthol.

The New Medical Building of Tulane University.—The New Orleans *Times-Democrat* for November 5th contained an interesting description of the new building provided for the medical department of the university by the generosity of Mrs. Richardson, the widow of the late Dr. T. G. Richardson, the emeritus professor of surgery. It seems that the building was designed on plans devised by Dr. Edmond Souchon, professor of anatomy and clinical surgery. The plans and general arrangement of the building are shown in cuts, and of these we here reproduce two, for which we are indebted to Professor Souchon. They show the building in section and the plan of the first floor.



A cross section from Villere to Robertson Streets.



Plan of first floor.

The building will admit of furnishing adequate auditorium and laboratory privileges to a large number of students. We congratulate Tulane University on such an acquisition, and Dr. Souchon on his success in planning the building.

The Therapeutical Uses of Grindelia Robusta.—At a recent meeting of the *Société de médecine et de chirurgie pratiques*, the proceedings of which are reported in the *Mercredi médical* for December 7th, M. Jasiewicz remarked that *Grindelia robusta*, long employed in the United States, had of late years begun to be made use of in France. The entire plant was employed, but the active part was a resin obtained especially from the flower heads and the involucre. The preparations in use were the fluid extract (dose, from seven to forty-five grains), a tincture (dose, fifteen to forty drops), and an alcoholic extract (dose, three pills daily, each containing from a grain and a half to two grains). All these preparations, he said, were readily taken by patients. In view of the slight toxicity of the drug it might in case of need be given in pretty large doses, but care should be taken to give it in divided doses, because, according to Bardet, large quantities taken at one time might prove fatal. As for its physiological action, grindelia, according to Bartholow, one of the authors who had most thoroughly studied it, caused a slight sensation of heat in the stomach, retarded the pulse and respiration, dilated the pupils, and gave rise to sleep. It had a sharp, somewhat acrid taste. Although it was not very poisonous, from a hundred to a hundred and twenty grains of the fluid extract was capable of killing a rabbit after producing paresis of the hind limbs and of the respiratory muscles. Clinically, according to the American physicians, and their opinion had been confirmed in practice, grindelia was indicated in all the respiratory neuroses, such as asthma (and especially spasmodic asthma), whooping-cough, nervous cough, and hay fever and emphysema. The plant acted favorably also in acute bronchitis, but its employment had to be continued for a certain length of time. In chronic bronchitis the results were less satisfactory. To tell the truth, in whooping-cough antipyrine appeared to have sedative powers superior to those of grindelia. The latter, however, could be given for a greater length of time without danger, and this was a very great advantage in a disease the treatment of which was always prolonged, of whatever sort it might be. Indeed, although grindelia diminished the violence of the paroxysms, it did not appreciably shorten the duration of the disease, which really was not a respiratory neurosis, but a distinctly infectious disease, against which it was necessary to use tonics and antiseptics along with antispasmodics. But in asthma the action of grindelia was much more efficient. It allayed the dyspnœa and, so long as its use was continued, staved off the occurrence of the paroxysms, but could not prevent their ultimate return. So far as this last-named purpose was concerned, potassium iodide was the only drug indicated. The author had had no experience with grindelia as a topical application, but he quoted M. Bardet as regarding its use in elytritis, genito-urinary catarrhs, and burns; also M. Bocquillon as having pointed out its utility in allaying the irritation of skin diseases.

Lectures and Addresses.

LECTURES ON THE DIAGNOSIS OF ABDOMINAL TUMORS.*

By WILLIAM OSLER, M. D.,
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LECTURE I.—TUMORS OF THE STOMACH.

GENTLEMEN: I propose in the following course to bring before you the experience gleaned during a period of twelve months in the cases of abdominal tumor which have come before me for diagnosis. I have not included the cases admitted under the care of Dr. Thayer (my first assistant) during my absence in July and August, unless I had previously or have afterward seen them. The condition has been dictated at the time of examination, the diagnosis made, when possible, and the subsequent history of the cases has been carefully followed. I have not included in the list instances of ascites, appendicitis, or simple enlargement of the liver or spleen; only cases in which a definite tumor existed in connection with one or other of the abdominal organs. We shall take up the cases in the following order: stomach, of which there were twenty-four, liver and appendages, intestines and peritonæum, renal, and miscellaneous.

In the diagnosis of abdominal tumors Bishop Butler's maxim that "probability is the rule of life" is particularly true, and the cocksureness of the clinical physician, who formerly had to dread only the mortifying disclosures of the post-mortem room, is now wisely tempered when the surgeon can so promptly and safely decide upon the nature of an obscure case.

With the methods of examination of the stomach you are all familiar, having frequently seen them applied; and as elaborate details are available both in the text-books on physical diagnosis, and more fully in the recent special works on diseases of the stomach by Ewald,† Boas,‡ Bouveret,# Debove, and Rémond,‖ I shall proceed at once to the consideration of the subject in hand.

Tumors of the stomach are formed (1) by the organ itself in a condition of abnormal dilatation or contraction; (2) by nodular or massive outgrowths of its walls.

I. THE TUMOR FORMED BY A DILATED STOMACH.—There were thirteen cases of dilated stomach in the series, in ten of which the organ itself formed a prominent tumor *visible on inspection*. These will form the subject of the present lecture. In all of the cases the existence of a nodular pyloric tumor was also determined. In another case, not considered here, the dilatation of the stomach was caused by the pressure on the duodenum of a tumor of the colon. I will first read to you the histories of the cases, sometimes with the comments dictated at the time of examination, and then make some general remarks on the diagnosis of dilated stomach. Though the condition is common, I am surprised that general practitioners so frequently overlook its presence, owing in large measure to the transgression of one of the primary rules of diagnosis, namely, to carefully and systematically go through the routine of inspection, palpation, percussion, and inflation.

CASE I. *Tumor caused by Dilated Stomach; Nodular Tumor in Right Epigastrium; Waves of Peristalsis.*—George A., aged thirty-nine, admitted September 1st, complaining of pain in the abdomen and vomiting. Patient is a tailor by occupation, and has used alcohol to excess. Present illness began last Christmas with symptoms of dyspepsia, occasional vomiting, eructations, and pain in the region of the navel. The pain was much worse after eating and was described as of a gnawing character. The food very often turned sour. Has never vomited any blood. Lately the attacks of vomiting have come on at longer intervals and large quantities of brownish, foul-smelling material have been ejected.

Present Condition.—Patient is a medium-sized man, much emaciated, particularly in the trunk and extremities; there are no glandular enlargements. The tongue is thickly furred. The abdomen is flat, somewhat scaphoid, but presents a slight prominence above and to the left of the navel. At intervals of a minute or two there appears in the epigastrium and upper umbilical region a prominent tumor, the longest diameter transverse, and having somewhat the shape of the stomach. The chief prominence is in the left hypochondrium, and the greater curve emerges beneath the costal margin in the left nipple line, passes obliquely downward to about two inches below the level

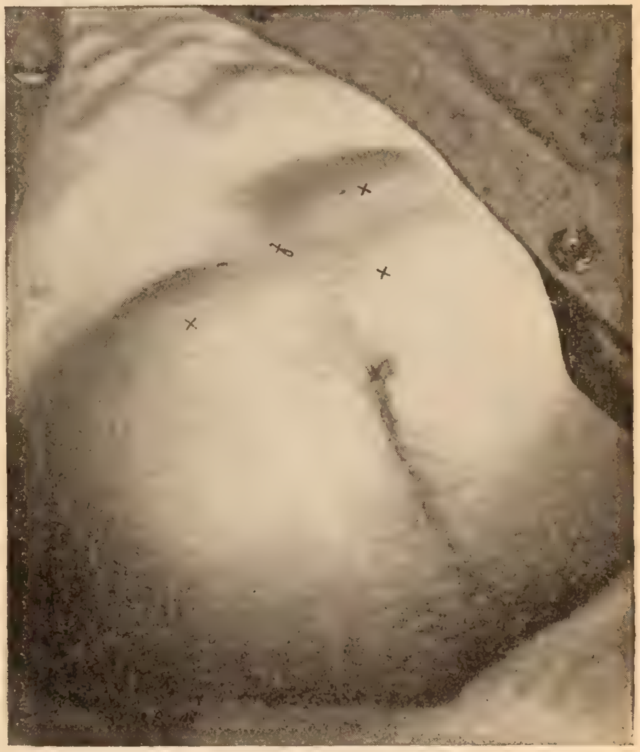

FIG. 1.—From a photograph by Dr. Hewetson, showing undulatory waves of peristalsis in Case I. The crosses are placed on the three prominent waves. The letter *f* indicates the depression on the lesser curve.

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* Delivered to the Post-graduate class, Johns Hopkins Hospital, November and December, 1893.

† *Klinik der Verdauungskrankheiten.* Dritte Auflage. Berlin.

‡ *Diagnostik und Therapie der Magenkrankheiten.* Theil ii. Leipsic.

# *Traité des maladies de l'estomac.* Paris.

‖ *Traité des maladies de l'estomac.* Paris.

of the navel, and then turns upward and to the right, reaching nearly to the ribs. The lesser curve, not so distinct passes two inches from the ensiform cartilage. During the prominence of the tumor waves of contraction pass from left to right and there is sometimes a well-marked depression separating the prominent masses to the left and right of the middle line. During the periods of contraction the masses are firm and resistant; in the intervals they almost completely disappear and the abdomen in these regions is quite soft. In the right parasternal line, just below the edge of the liver, is a nodular tumor.

Fig. 1 is from a photograph taken during the passage of the waves of contraction, three of which are plainly to be seen at the situations marked with the crosses. The letter *f* is placed in the depression separating the stomach into right and left. After several attacks of vomiting, and after having the stomach thoroughly washed out, the distention was very much less marked, and the peristaltic movements were less frequent. The nodular tumor mass was then felt to be very much more in the middle line. For a week or ten days before his death this patient had tetany, which is not a very uncommon event in dilatation of the stomach. Death occurred September 26th.

The autopsy showed at the pyloric extremity of the stomach a crater-like tumor mass eight by seven centimetres, the margins thick, elevated, and indurated. Externally there was great thickening about the pylorus, with numerous nodules on the peritonæum. At the pylorus the tumor was massed about the orifice, through which, however, the little finger could pass. The coats of the stomach were enormously thickened. Fig. 2, from a photograph taken on the post-mortem table, shows well the dilatation of the stomach.

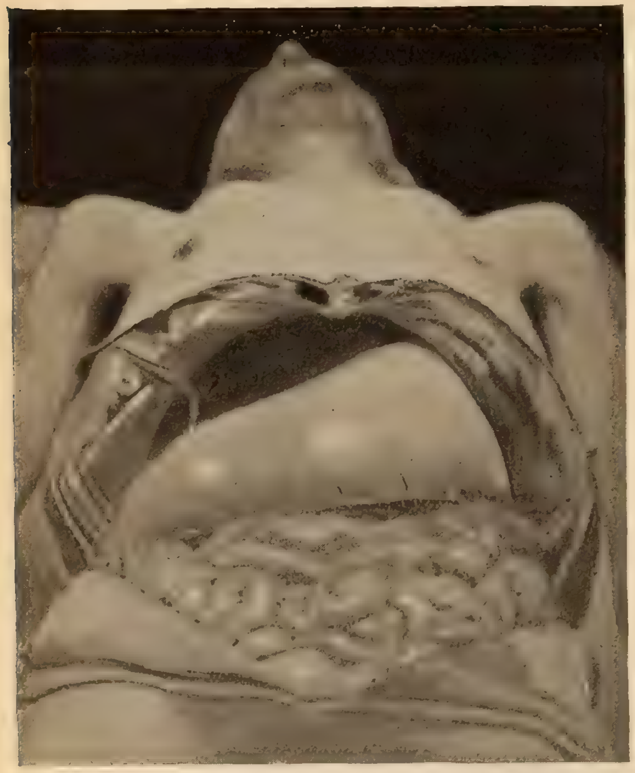

Fig. 2. Carcinoma of pylorus, showing the dilatation of the stomach as it appeared at autopsy. From a photograph by Dr. Hewetson.

Case II. *Dilated Stomach, forming a Prominent Tumor; Ill-defined Flattened Mass in Right Umbilical Region.*—John L., aged fifty-eight years, seen with Dr. Bryson Wood, September 13th, complaining of indigestion and loss of weight. The patient is a tall, large-framed man, who has lived a life of unusual energy and activity, and prior to 1875 had been a hard drinker.

His mother died of some stomach trouble, the precise nature of which he does not know. With this exception, his family history is good. He has always had to be a little careful about eating, but until within the past six months has had good health. The present illness began with dyspeptic symptoms, eructations of gas, feelings of distress a few hours after eating, and occasional vomiting. The chief discomfort was at night, five or six hours after the last meal. Lately these features have increased very much; he has not been able to take solid food; the eructations of gas have become very marked, and he has had at intervals vomiting of large quantities of liquid and undigested food. He has lost rapidly in weight and has fallen from a hundred and ninety-five to a hundred and forty-two pounds.

The condition on examination was as follows: Large-framed man, not cachectic-looking, moderately emaciated. The tongue has a light white fur.

The abdomen is below the level of the costal margin. In the upper zone, occupying the left epigastric, the left umbilical, and the left hypochondriac regions, there is an irregular swelling which at intervals shows waves of peristalsis and assumes a shape suggestive of a distended stomach. A lesser curvature can be distinctly seen three fingerbreadths from the ensiform cartilage; a greater curvature about two inches below the level of the navel. The most marked prominence is just beneath the left costal margin. To the right the outline of the swelling extends beyond the nipple line. The contrast between the upper and lower abdominal zones is very striking and the diagnosis of the condition could be made at a glance, as the organ hardened when the waves of peristalsis passed over it.

On palpation, the abdomen was everywhere soft and there was no tenderness. During contraction the stomach was firm and resistant. There was no nodular tumor to be felt, although between the navel and the right costal margin there was a sense of increased resistance, particularly beneath the ribs. The area of liver dullness was diminished. There was no enlargement of the superficial glands.

The patient was ordered to have the stomach washed out every morning, and to take a diet of milk and egg-white.

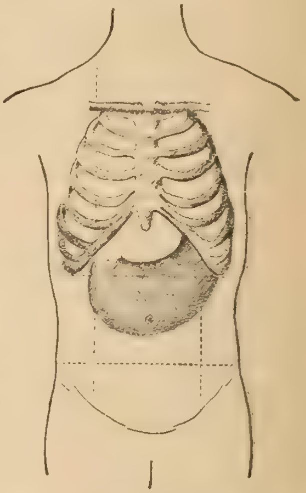

Fig. 3.—Showing the stomach outlines in Case II.

October 17th.—Patient was seen again to-day with Dr. Salzer, partly with a view of determining the advisability of a Loreta's operation. Since the last note the patient has improved considerably under the daily use of the stomach tube, and he has been able to take Leube's beef extract, meat balls, and small quantities of milk without discomfort. He has not, however, gained in weight; still looks very haggard and emaciated, and says he at times feels very queer in his head, as if he would go crazy.

The abdomen is a little full in the upper zone and every few minutes the distinct outline of the stomach can be plainly seen, forming a tumor of unusual prominence. The stomach tympany can be obtained as high as the fifth interspace in the parasternal line.

On palpation, there is no thickening or nodular mass to be felt in the epigastric region, nor on the deepest inspiration can any mass be felt beneath the left costal margin. Just below the limit of the stomach and to the right of the navel there is an ill-defined flattened mass which does not, however, feel like a thickened pylorus, nor is it likely that the pylorus could be felt in this situation with the stomach tympany and the outline of the stomach passing, as it does to-day, with such distinctness beneath the right costal margin. It seems more probable that the pylorus is covered by the distended organ.

October 26th.—Subsequent to my last visit the patient was transferred by Dr. Salzer to the care of Dr. Simon, who tells me that uræmic symptoms developed about the 23d and the patient died comatose on the 25th. There was no autopsy.

Case III. *Dilatation of the Stomach; Tumors in Epigastric and Right Hypochondriac Regions.*—A. P., aged forty-seven years, seen October 19th with Dr. Jarrett, of Towson, complaining of indigestion and stomach trouble. His personal and family history are excellent, though he states that one brother died of a tumor in the abdomen. For the past six months he has been in failing health and has had distress after eating, usually within half an hour, sometimes as soon as ten minutes. The vomitus consists of the food he has taken, never any blood. He has never vomited any very large quantities. The pain is marked after eating and becomes more severe until the contents of the stomach are ejected. On several occasions he has passed blood in the stools, but he thinks this comes from hæmorrhoids which he has had for many years.

The patient is a very well built man, looks thin, but is a little sallow, scarcely cachectic. Tongue is red, clean, and indented.

Abdomen.—Walls thin. Occupying the left epigastric region there is a large projection which varies in shape and in prominence. Definite peristalsis is to be seen, but the waves do not pass beyond the middle line. This bulging during peristalsis occupies the left epigastric and the upper right quadrant of the umbilical regions.

On palpation, the abdomen is everywhere soft, very resistant just below the ensiform cartilage and over the prominence above noted. In the latter the resistance varies with the presence or absence of the peristaltic waves. Immediately below the ensiform cartilage there is a definite ridge-like swelling which is superficial, very tender, and does not extend entirely across the space between the costal margins. It has a boardy hardness. On drawing a deep breath the fingers can be placed directly above it and it descends about an inch. In the left lumbar region, just below the tenth rib and the adjacent costal margin, there is to be felt a firm mass, extending seven centimetres in a vertical direction. Anteriorly in reality it can be felt within the right epigastric region, and outward it extends to nearly the mid-axillary line. On deep inspiration it descends and gives one somewhat the impression of a rounded body, and on bimanual palpation it is not very movable.

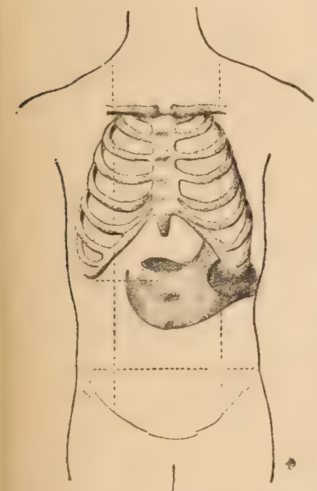

Fig. 4.—Showing the position of the tumor masses in Case III.

The edge of the spleen is not palpable; neither kidney can be felt; the edge of the liver is not palpable; nor does there appear to be any definite enlargement of the organ. On inflating the stomach the prominence in the epigastric and umbilical regions becomes very marked and its lower curve extends to a little below the navel. The upper limit of stomach tympany is just at the sixth rib in the nipple line. There are no glandular enlargements. The patient became gradually worse and died about Christmas time.

Case IV. *Dilated Stomach, forming a Visible Tumor; an Oblong Mass in the Right Epigastric and Umbilical Regions.*—Annie D., aged forty-eight years, Bohemian, admitted October 1st, complaining of swelling in the abdomen, pain in the back, and vomiting.

She knows of no hereditary disease in her family. Her husband died of tuberculosis.

Patient was always strong and well; she has had three children. Her present trouble began eight months ago with pain of a dull, aching character in the stomach, and dyspepsia, but until recently she has had no vomiting, and has kept about and at work up to a week ago, when she began to vomit. Prior to this she noticed that the abdomen was swollen. The vomiting has been chiefly after taking food, and she has not brought up any large quantities.

Present Condition.—Patient is thin, but the emaciation is not extreme. The lips and mucous membranes are of a fairly good color. Tongue is slightly furred with a white coating. Pulse regular; temperature normal; superficial glands not enlarged.

The abdomen is prominent, particularly in the umbilical and left hypochondriac regions. Under observation there occur in these parts undulatory waves of peristalsis, and the outlines of the stomach become unusually distinct, the greater curvature reaching fully three inches below the level of the navel, the lesser curvature just above this point. As the waves of contraction pass there is a vertical constriction just to the left of the middle line. The peristalsis comes on spontaneously, and any stimulus, such as flipping with a towel or even palpation, at once excites it. On palpation, except during the time of the contraction referred to, the abdomen is everywhere soft. Just above and to the right of the navel there is to be felt an oblong mass, which takes a direction upward and outward toward the costal margin. It is oblong, slightly movable, firm, smooth, and not painful.

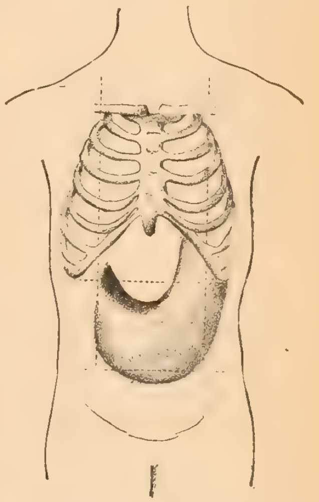

Fig. 5.—Showing the position of the tumor and the outlines of the stomach in Case IV.

On October 3d a test breakfast was given at 8 a.m. At nine o'clock the stomach tube was introduced and about a quart and a half of very sour-smelling, brownish material removed. During the passage of the stomach pump the patient vomited, and she felt very faint. The examination for free hydrochloric acid was negative.

The patient left the hospital on October 14th in much the same condition, and has not been heard of since.

Case V. *Remarkably Movable Tumor of Pylorus; Dilated Stomach; Gastro-enterostomy.*—Mary M., aged fifty-eight years, colored, admitted on October 26th, complaining of pain in the abdomen and vomiting.

She has been a healthy woman, married twelve years; has had six children and four miscarriages. She has always had very good health up to the onset of present illness, which began in June with burning feelings in the chest and pain after eating, sometimes vomiting. These symptoms have continued with variations. At times she would be better, and then she would have spells of belching and vomiting. She had often vomited large quantities of liquid. She makes no complaint except of the stomach symptoms. Lately she has been very constipated.

Abdomen.—The walls are very loose, flabby, thrown into many folds. In the right hypochondriac and right epigastric regions there is a marked rounded prominence, which below extends to within two centimetres of the navel, and reaches nearly to the middle line. It descends slightly with inspiration. On palpation, this proves to be a solid mass, which can be grasped and is freely movable. It is irregular, rounded, not reniform, but is smooth at its upper and right borders, more irregular below and to the left, but a definite hilum is not to be felt. To the touch there is conveyed a sense of firm yet elastic resistance, such as is given by a solid organ. On prolonged palpation no gas is felt passing through it. It is extraordinarily mobile, and can be pushed into the epigastric region far over into the right hypochondriac region, and below into the right lumbar and umbilical regions to a level with the line of the anterior superior spines. On firm pressure, the lower margin can even be forced into the iliac region. The diagram, which was made with great care, illustrates the various positions which the mass can be made to assume. It can also be pushed into the right hypochondriac region, so as to *be covered almost completely by the ribs*, and in subsequent examinations this was not infrequently the situation in which it was found, and from which it could only be dislocated by the deepest inspiration or by deep pressure in the renal region. The mass is not tender even on firm pressure. There is dullness over it, but not complete flatness. The patient notices that the mass changes in position as she moves about, and when she sits up it moves far down into the abdomen, while when on her back it is frequently beneath the right ribs. When this mass is out from beneath the right costal margin the right kidney can not be felt, nor on the left side, on the deepest inspiration, could the kidney be palpated. Behind there are depressions in the renal regions.

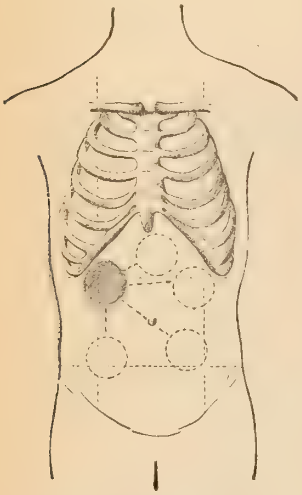

FIG. 6.—Showing the positions into which the tumor could be placed in Case V.

The edge of the liver can not be felt; the area of splenic dullness is not increased; the edge can not be reached even on deep inspiration.

A test breakfast, withdrawn an hour and ten minutes after, gave two hundred cubic centimetres of fluid in the stomach, which contained no free hydrochloric acid. The stomach was inflated with gas, and the outline of the greater curvature reached almost to the navel. When the gas was in the stomach, palpation of the most careful character gave no sensation of any fluid passing through the tumor.

This patient came in with a diagnosis of probable cancer in the stomach, which the history of repeated attacks of vomiting and progressive loss of weight and the existence of a tumor in the abdomen seemed to justify. Extreme mobility is a feature of certain tumors of the pylorus, as in the specimen which I showed at the Philadelphia Pathological Society of solid tumor of the pylorus, about the size of the mass under consideration, which could be moved readily into either hypochondriac region, and which was sometimes completely under the ribs and out of reach. The autopsy showed it to be a tumor of the pylorus. The possibility of such cases has to be considered in speaking of the nature of the present one. Here the mass is of unusual mobility, and can be passed into the renal region on the right side. It has not a reniform shape, but it has the consistence and the resistance of the kidney. A point very much in favor of its renal character is the mobility downward, and the tumor of this sort which can be pushed up beneath the ribs and also far down to the iliac regions is certainly highly suggestive of floating kidney. Another important fact is that, in a woman with such a lax abdominal wall, no right kidney can be felt. The gastric disturbance and dilatation of the stomach present are both explicable on the view that this tumor mass has compressed the duodenum and caused secondary dilatation. Nor is this, considering the history of so many cases, inconsistent with the view that the tumor mass may be really a kidney. On the other hand, the tumor has not the shape of a kidney, and a distinct hilum can not be felt. No left kidney can be palpated, and it may be that this is an instance of conglomerate kidney, such as was found in Polk's celebrated case.

At any rate, I have suggested to Dr. Halsted that an exploratory laparotomy be made, and if it is found to be a movable kidney, the organ can be stitched into position.

November 4th.—The patient has been better for the past few days. She has had her stomach washed out early in the morning. To-day at ward class a careful examination was again made. The tumor mass was evident just beneath the right costal margin, and it was difficult to displace it from this point by the deepest inspiration; but, on turning on the left side, it readily fell over toward the umbilicus, and had practically the mobility noted before. The stomach was again inflated, and the outlines became remarkably plain. The greater curvature was just about the level of the navel, somewhat above the level previously noted. The peristalsis was unusually distinct.

5th.—This morning at 10.30 Dr. Halsted operated, making a long vertical incision over the right rectus. When the peritonæum was opened the tumor mass was directly exposed, and found to be a solid growth of the anterior wall and lesser curvature of the stomach in the pyloric region. There were no adhesions; the stomach was much dilated. He at first intended to resect the tumor, but, on examining the retro-peritoneal glands, they were found to be enlarged, and it was thought best to do a gastro-enterostomy. The patient died two days afterward.

CASE VI. *Tumor in Left Epigastric Region; Dilatation of the Stomach.*—In consultation with Dr. Barclay I saw to-day, December 6th, A. B., aged sixty-four years, a German.

Patient had been in failing health for some months, and had had dyspepsia for several years. He, however, kept about and at his work until early in October, when he consulted Dr. Barclay for jaundice, which seems to have been intense and to have come on suddenly, not, however, with much pain and not in a way suggestive of gallstones. He had never had jaundice before, but had one or two attacks of pain resembling that of gallstone colic. On examination, the left lobe of the liver was found to be enlarged and a tumor mass occupied the whole of the epigastric region. It was tender, not fluctuating, and the doctor regarded it as an enlarged left lobe of the liver. He had moderate fever. After the persistence of these symptoms for some weeks he vomited a quantity of pus, the tumor mass gradually disappeared, and the jaundice became less intense. The gastric symptoms, however, continued and he began at intervals to vomit large quantities of dark-brown material, containing undigested remnants of food. The doctor has washed out the stomach with great relief, but he has gradually failed and has become more anæmic.

Present Condition.—The patient is fairly well nourished; face is not especially emaciated, and he has not a cachectic look. There is no jaundice. The temperature is normal; pulse about 96, of fairly good volume; tongue is slightly furred.

Abdomen.—Panniculus is well preserved. The upper zone is prominent, particularly in the left hypochondriac region, and at intervals a distinct hemispherical prominence appears below the left costal margin, and waves of peristalsis are seen passing from left to right. The prominence is noticeable as far as the navel, but a definite contour of the stomach is not visible. Midway between the ensiform cartilage and the navel and a little to the left there is a tumor-like prominence which moves with the descent of the diaphragm. On palpation, the abdomen is everywhere soft, quite painless on pressure, and the tumor mass just described is felt as a firm, solid body about five centimetres in vertical extent and about six centimetres in transverse extent. It is entirely to the left of the middle line. It is firm, smooth, not painful, except on very firm pressure, and is not movable. It descends about four centimetres during inspiration. No gurgling is felt in it. Nothing is to be felt to the left of the median line in the pyloric region. Splashing can be readily obtained, and on percussion the stomach tympany extends to a finger's breadth above the navel. The upper limit of the liver dullness in the mamillary line is at the seventh rib, and it does not extend beyond the costal margin. The left lobe of the liver is not palpable; the dullness is at the juncture of the fifth costal cartilage with the sternum, and extends three fingers' breadth. It can be separated from the dullness over the tumor mass in the epigastric region. The spleen is not enlarged. There are no superficial glandular enlargements.

The patient had had a severe attack of vomiting this morning, and his stomach was not nearly so much dilated as usual. The vomited matter which I saw had the usual characters—dark brown, with frothy scum. The urine was somewhat diminished, and he complained very much of thirst.

Two points of interest present themselves in this case, which otherwise seems to have all the characters of ordinary dilatation of the stomach from pyloric obstruction. In the first place, the nature of the attack of severe jaundice with the tumor mass in the epigastric region. From Dr. Barclay's account, there can be no question that the patient vomited a large quantity of pus, and that subsequent to this the tumor disappeared and the jaundice got better. There are two suggestions in this connection: that there was a large carcinoma of the stomach, with suppuration at its base and about the tissues of the gastro-hepatic omentum, with compression of the bile ducts. Suppuration does occur at the base of malignant growths, more particularly when they form adhesions with adjacent organs, and I have placed such instances on record; indeed, there may be a considerable collection of pus between the left lobe of the liver and the stomach. The other suggestion is that the jaundice and enlargement of the left lobe of the liver were associated with gallstones and suppuration in the region of the ducts, with discharge into the stomach, and subsequent cicatricial contraction about the pylorus and dilatatio ventriculi. The jaundice, however, would scarcely have disappeared, and this is not a very likely condition. And, lastly, it is interesting to note here the situation of the tumor mass—not at all in the position usually felt in carcinoma of the pylorus, but, as will have been noted in the histories of the other cases, the tumor is extremely variable in position. Though in a somewhat unusual situation, it is quite possible that this really may be a tumor mass causing the stenosis of the pyloric orifice.

Dr. Barclay writes me that this patient died on the 29th of December of exhaustion. The post-mortem showed an enormously distended stomach, which covered the intestines like an apron. The pyloric orifice was surrounded by a large mass of cancer, which so nearly occluded it that only the tip of the finger could enter. The cancer extended also slightly into the duodenum and on the posterior wall of the stomach, which showed extensive ulceration. The left lobe of the liver was shrunken and showed soft, nodular masses breaking down into pus. The mesenteric glands were enlarged and cancerous. The bile passages and gall bladder were normal.

The post mortem does not throw much light upon the early history of this case, the symptoms of which came on apparently with jaundice and enlargement of the left lobe of the liver. The tumor mass proved to be, as was supposed, at the pylorus, though in a somewhat unusual situation—entirely, at the time of my visit, to the left of the middle line.

Case VII. *Dilated Stomach; Tumor at the Pyloric Orifice.*—*October 1st.* I saw to day, with Dr. W. B. Perry, Mrs. R., aged about sixty years, complaining of dyspepsia and vomiting. She had been a healthy woman until about a year ago, when she began to have attacks of dyspepsia and occasionally of vomiting. These symptoms have become progressively aggravated and she has within the past three months lost flesh rapidly. A marked feature in the case has been the vomiting at intervals of very large quantities of a brownish liquid mixed with portions of food.

Patient is a small-framed woman, much emaciated, and looks very feeble. The abdomen is greatly distended, chiefly on the left side and below the level of the navel. The nature of the trouble is at once apparent by the active waves of peristalsis which, as they pass from left to right, bring out with unusual distinctness the contour of the greater and lesser curvatures, the former passing at a level of about three inches above the pubes, and the latter midway between the navel and ensiform cartilage. The organ becomes unusually hard and firm. Far over to the right, just at the border of the epigastric and umbilical regions, there is to be plainly felt an irregular, nodular mass, which is

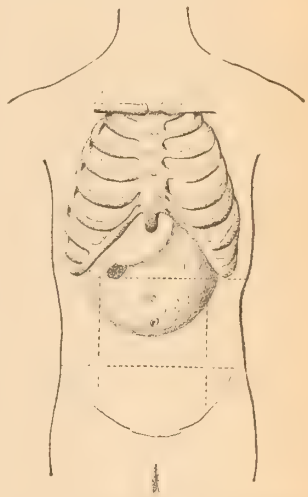

Fig 7.—The position of the nodule and outlines of the stomach in Case VII.

movable and is depressed on inspiration. No gas is felt passing through it, but the position and characters suggest a pyloric cancer. Lavage had been already practiced for some time, but she was in too feeble a condition to expect much from any treatment.

Dr. Perry writes that the patient died on October 4th.

Case VIII. *Dilatation of the Stomach, forming a Visible Tumor; Nodular Mass at the Pylorus.*—January 10, 1893, Captain ——, of Virginia, patient of Dr. R. J. Hicks and Dr. Salzer, came complaining of dyspepsia and discomfort after eating.

The patient has been a healthy man, a free liver, and a late sitter; irregular in his meals. He has not been a chronic dyspeptic, and has only had an occasional attack of indigestion until the onset of the present trouble. From Christmas, 1891, he has been ailing, though able to attend to his business. He has had loss of appetite; no special nausea, and has never vomited any large quantity. After eating, however, particularly an ordinary meal, he has feelings of uneasiness and distress, and rumbling and distention in the upper part of the abdomen. He has never had any severe pain, but a sense of uneasiness when the stomach is full and occasionally a griping pain. Ever since the attack of diarrhœa following the influenza he has had obstinate constipation. There has been persistent loss of weight, from a hundred and ninety to a hundred and forty-five pounds. Though attending to his business, he is at times very weak and feeble, and feels that he has lost a great part of his former vigor.

Present Condition.—Thin, not extremely emaciated, not cachectic; color of mucous membrane good. Abdomen a little below level of costal margin; marked fullness in epigastric and umbilical regions, leaving a definite furrow along right costal margin. During observation distention becomes much more marked, and at intervals the outline of the stomach is unusually distinct. Waves of peristalsis pass actively from left to right, and the lower limit of the stomach is seen to be at least a finger's breadth below the navel. To the right it extends almost to the costal margin opposite the tenth rib. The peristalsis is unusually active, waves passing every few moments, and during their passage the stomach walls become hard. Gas can be heard bubbling through the pylorus.

Palpation.—Everywhere soft; no special resistance except over the stomach itself when in contraction. The pylorus can be felt in the parasternal line at a point midway between the navel and the tip of the tenth costal cartilage. Here is a firm thickening about the size of a large walnut. Though this is a little far out and low for the situation of the pylorus, yet the stomach is a good deal depressed and the whole pyloric pouch lies to the left of the middle line. There is nothing special to be felt along the line of the lesser curvature. There is a little resistance between the costal margin and the navel, which is probably due to the right lobe of the liver. Gas is not felt to bubble through this pyloric mass, nor does it seem to vary in resistance and hardness.

January 22d.—Patient came into the private ward under my care, chiefly to determine whether an operation, which had been suggested by Dr. Salzer, was advisable or not. On admission, the stomach was very much in the condition mentioned in the previous note. Ewald's test breakfast, withdrawn an hour after, yielded two hundred and fifty cubic centimetres of a clear, slightly yellow fluid containing partially digested bread. The odor was sour; the tests for free hydrochloric acid were negative.

He had at times a great deal of distress, owing to the active character of the peristaltic movements. He was placed on a diet of milk, beef juice, and egg albumin, small quantities being given every two hours. The stomach was thoroughly emptied night and morning.

Within a few days this treatment made the greatest change in the condition of dilatation; the organ reduced greatly in size, the waves of dilatation were no longer evident, and he felt much more comfortable. The reduction in the dilatation made a very marked change in the tumor mass above mentioned. Instead of a small, nodular body to be felt far over to the right, there was now evident to the right of the parasternal line, in the epigastric region, a large, solid mass of the size of an egg. In spite of the improvement in the local condition, his general strength failed with rapidity, and on the 28th it was thought advisable for him to be removed to his home, where he died early in March.

(*To be concluded.*)

Original Communications.

ACUTE PNEUMONIA IN CHILDHOOD.*

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It has seemed to me that in an association of this nature it should be the endeavor of the members to present, when practicable, such subjects as shall touch upon the daily labor of the greatest numbers, rather than the curious and exceptional phases of medical experience. It is with this idea that I bring forward to-night the well-known subject of pneumonia in children, in the hope that each one whose general practice brings him into contact with children may contribute something to the discussion which will follow. As it is my aim, as far as possible, to avoid the hackneyed aspects of the subject, I will, without apology, make use of the terms lobar pneumonia and broncho-pneumonia as best expressing to me the essential differences of the two divisions of the subject. With the classical picture of lobar pneumonia—showing microscopically the pulmonary alveoli filled in varying degrees with fibrin, leucocytes, desquamated alveolar epithelium, and red blood-cells, but with an otherwise intact pulmonary framework—you are doubtless all familiar, as also with the four pathological stages of congestion, red hepatization, gray hepatization, and resolution, through which the process passes.

Many of you, I presume, gained the impression from text-books that cases of lobar pneumonia were of extreme rarity under the fifth year. Statistics now show us that about thirty-three per cent. of the pneumonias of even the first two years of infancy show the well marked clinical course and pathological features of the lobar variety in the adult. These cases can usually with care be readily differentiated from those of broncho-pneumonia, although there are occasional instances over the classification of which the authorities are at variance.

Lobar pneumonia in a large proportion of cases is caused by an oval coccus called the *Micrococcus lanceolatus* (*Diplococcus pneumoniæ*, pneumococcus of Fraenkel). There are, however, occasional cases in which the clinical story and morphological character of the lesion are similar to those of lobar pneumonia, which are associated not with the *Diplococcus lanceolatus*, but with other germs, such as the bacillus of Friedländer, pyogenic bacteria, etc.*

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* Read before the Hospital Graduates' Club, November 23, 1893.

Lobar pneumonia occurs most frequently during the spring months, and attacks by preference strong and previously healthy children, without especial preponderance of either sex. In the typical case the onset is sudden, ushered in most commonly by vomiting and a high temperature, occasionally by partial or general convulsions or a chill. The breathing is so rapid as to attract attention. The respiration has a characteristic rhythm; the quick, anxious inspiration is followed by a distinct pause before the explosive and often moaning expiration. Later the skin becomes dry and pale, and the cheeks flushed, the lips dry or cracked, but seldom presenting herpes. Cough, which may be painful and repressed, is of the hacking expiratory type. The pleural pain is often referred to the epigastrium, but may be correctly localized; and the child seeks a comfortable position, which it abandons unwillingly even to receive fluids for the relief of thirst. The respirations are 40 to 60 per minute, the pulse 120 to 160 or even more, but regular, and the temperature varies from 102° to 105·5°, with slight morning remissions and evening rises. The development of the physical signs may be prompt or delayed. The respiratory murmur loses its vesicular character and becomes rougher, sharper, and of higher pitch until pure bronchial breathing is heard. Fine moist râles and rarely crepitant râles develop. The normal resonance is obscured and becomes marked dullness or dull tympany. The vocal resonance and fremitus is increased. These changes, once inaugurated, usually advance promptly until the consolidated area in one or more lobes can be clearly defined by physical exploration.

In simple and favorable cases the crisis occurs between the fifth and ninth days, occasionally between the third and fifth days. The temperature in twelve to twenty-four hours drops several degrees to below the normal, with sweating and somnolence, and the child falls asleep to awake greatly improved. The change in the appearance of the patient in a few hours is astonishing—facies, pulse, respiration, appetite, and secretion are all changed for the better; but the signs of consolidation and the cough remain at first unmodified, to disappear with inexplicable rapidity during the succeeding days.

Did all cases follow this classical course, there would be few difficulties in the way of early and complete diagnosis; but there are many anomalies, and it is these variations from the normal which cause us the greatest anxiety, and therefore are of the greatest interest. They may be grouped as †—

1. Abortive pneumonia.
2. Wandering pneumonia.
3. Gastric pneumonia.
4. Cerebral pneumonia.

1. The *abortive cases* begin with all the rational signs of pneumonia, and the diagnosis seems clear, although examination may reveal only modified resonance or slight dullness, rough or broncho-vesicular breathing, and localized râles, when, to our complete surprise, in twenty-four to thirty-six hours there is a sudden disappearance of both physical signs and symptoms, with speedy convalescence. These are undoubtedly instances of localized hyperæmia of the lung tissues which, for some unexplained reason, do not go on to complete consolidation.

Far too little attention has been given in the text-books to these areas of congestion in the lung which, existing alone, constitute the abortive form of the disease, or which may precede or accompany the development of true pulmonary consolidation. The omission has led to much confusion and lack of self-confidence among those who, seeing children but little, are mortified and disconcerted to find signs which they had one day satisfactorily established, the next day completely absent. These fleeting patches, for whose erratic development and localization we can find no satisfactory explanation, are not confined to the lobar form, but play, as we shall see, a very important part in the course of broncho-pneumonia. The congestion and engorgement of the pulmonary tissue give rise to slight or more marked dullness, to distant or distinct bronchial breathing according to their intensity. Pulmonary relaxation may add a tympanitic quality to the percussion note. Obstruction to the entrance of air may result in decreased respiratory murmur, while the penetration of air into the partly occluded vesicles accounts for the scattered râles.

2. *Wandering pneumonia* occurs under two clinical forms. With a continuous high temperature, daily examinations may show that additional lobes are involved, one after the other, without revealing the advance upon the temperature chart. Again, the temperature may fall sharply, as if the crisis had been reached, only to rise again promptly with the development of signs of consolidation in another lobe, and this may be repeated several times before the final critical fall takes place.

3. The *gastric cases* are most puzzling even to the careful observer, for the attack begins with severe vomiting, anorexia, diarrhœa, and heavily coated tongue, which, together with the referred pain in the epigastrium, lead almost irresistibly to the conclusion that the affection is of gastro-intestinal origin. To add to the difficulty, the appearance of the physical signs is usually delayed, a central pneumonia coming to the surface upon the third or fourth day, and often only appearing a few hours before the development of the crisis, which latter, as if to keep up the rôle which has previously been played, is often accompanied by profuse vomiting. To avoid falling into error in these cases, therefore, we must rely upon our observation of the continuous high temperature which does not fall after suitable treatment directed to the alimentary tract, and the evident pulmonary embarrassment, cough, and characteristic respiratory rhythm.

4. In a somewhat similar manner the *cerebral type* of pneumonia is ofttimes misleading, or at the least causes

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* The question whether a more exact distinction between the various forms of exudative pneumonia, based primarily on the germs causing them, is not desirable, is one which does not fall within the scope of this paper.

† Baginsky. *Praktische Beiträge zur Kinderheilkunde*, 1880.

great anxiety during the period of uncertainty. The well-known disproportionate size of the child's brain to its body renders the nervous system especially liable to disturbance in disease, and cerebral symptoms are very common in pneumonia. Although usually not so decided as to obscure the diagnosis, there are other cases where they are so pronounced as to divert the attention from the lungs to the brain, or at least to place us in doubt as to whether there be genuine meningitis, or whether the symptoms are transient and due to the influence of the hyperpyretic blood upon the central nervous system. Early or late convulsions, somnolence, delirium, headache, vomiting, constipation, irregular pupils, strabismus, irregularity of the pulse, retraction of the abdomen, grinding of the teeth, boring of the head into the pillow, may be present in varying combinations. Genuine meningitis, however, is a rare complication. Irregularities and intermissions of the pulse may exist in either disease, but the characteristic pulse of meningitis is slow, not rapid as in pneumonia.

Nervous symptoms quite frequently occur where there is extensive and hence more easily recognizable involvement of the lung and where the temperature is persistently higher than we find it in meningitis. Steiner * contends that a complicating otitis media may be responsible for many of these symptoms, and cites sixteen cases. From a prognostic standpoint the time of the development of the convulsions is of value, early seizures being of little importance, but late convulsions indicating speedy dissolution within twenty-four hours.†

Returning now to a consideration of the ordinary cases of pneumonia, we find the left lower and right upper lobes most frequently involved. Comparing the two sides, we find the right lung is more often affected than the left, and this preponderance is explained, as in the adult, by the frequent consolidation of the right middle lobe alone.

More than one lobe upon the same or opposite sides may be involved at the same time, or the process may extend to other lobes during the course of the disease. Unlike the adult lung, it is not uncommon for but a portion only of the lobe to show consolidation. The stethoscope high in the axilla will often detect consolidation of the upper lobe which does not reveal itself elsewhere. With superficial breathing the bronchial character of the breath sounds often disappears. In such cases careful percussion, however, reveals dullness, and if the child be made to cry, the bronchial character returns. Among the complications, bronchitis of the uninvolved lung occasionally supervenes and threatens death by suffocation. Pleurisy is common, and may give rise to pleural friction sounds; it influences the temperature, interfering with the critical fall, and it prolongs convalescence; exudation is revealed by flatter percussion note and lessened fremitus. Large effusions further seriously embarrass the respiration by pressure on the already crippled lung.

Whenever the crisis is unduly deferred or there exist signs of delayed resolution with anorexia and temperature, empyema should always be suspected and a needle introduced, for in the child bronchial breathing over the exudation is the rule, and if this fact be not remembered the effusion may escape recognition. Abscess, gangrene, and chronic caseous degeneration are rare possibilities. But, in general, the prognosis is excellent, the mortality being only about two per cent. of the cases, which fact further strongly distinguishes them from the next division of the subject.

Broncho-pneumonia is much the same insidious scourge of childhood in the winter months that the diarrhœal diseases are in summer. Unlike the lobar form, it chooses as its victims not the strong and well nourished, but the great army of weak, enfeebled humanity who bear the traces of rhachitis, scrofula, and hereditary syphilis, and show the effects of vicious environment, improper feeding, and neglect. It decimates the foundling asylums. It seizes upon those reduced by all chronic or exhausting maladies, and ingrafts itself with especial predilection upon those suffering from measles, whooping-cough, and diphtheria. It is further distinguished from lobar pneumonia by its gradual onset, its prolonged and irregular course, and its slow defervescence by lysis.

Studied in the dead house, it is found to some degree in a much larger percentage of those who come to autopsy than would generally be supposed.* Almost every portion of the pulmonary structure may be involved, and with kaleidoscopic variety each new case presents a different picture from the last. Trachea, bronchi, alveoli, interstitial tissue, blood-vessels, pleura, and bronchial glands share in the process, some invariably, others but occasionally. The disease is primarily one of the bronchi, both large and small, the mucous membrane of which is congested, swollen, and covered with mucus, while the smaller bronchi are filled with frothy purulent secretion. The inflammatory infiltration is by no means limited to the mucous membrane, but involves chiefly the wall of the bronchus and extends by contiguity to the adjacent alveoli and the intra-alveolar connective tissue. The alveolar epithelium proliferates, and, together with white and red cells and fibrin from the swollen capillaries, is soon present in varying amount in the vesicular spaces. The course of a bronchus is then comparable to the path of a hot needle plunged into pulmonary tissues, searing the adjacent structures as well as its own immediate course.† All portions of the lungs are not affected to the same degree. The process may involve only the bronchus with its terminal cluster of alveoli and its contiguous vesicles, or the consolidation may extend in every direction. It may be limited to small disseminated areas, or it may involve the larger part of both lungs. Every variation between the extremes appears sooner or later upon the autopsy table.

But the consolidation does not always exist alone; three other factors—atelectasis, congestion, and emphysema—one or all, may unite to further disable the already crippled lung. The development of the atelectasis has been explained by Gardner* as follows: Inspiratory efforts draw tenacious secretion or pseudo membrane deeper and deeper into the finer bronchi until it forms a valve like plug at the entrance to the group of terminal alveoli. The residual air contained in the alveoli is then absorbed or else the strong expiratory efforts force it little by little past the obstruction, while the valve-like mass in the bronchus prevents the re entrance of air during the weaker act of inspiration. Gradually the affected portion ceases to be aerated and the collapsed part is rendered useless and practically solid.

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* *Jahrb. f. Kinderh.*, n. F. ii.

† Holt. *Medical Record*, April 7, 1888. Cerebral Symptoms of Pneumonia in Children.

* Small areas are found, especially in the dependent portions of the lungs, in a large proportion of all asthenic and marasmic cases.

† Delafield. *Pathological Studies.*

Again, I believe that certain hyperæmic areas of the lung may become so engorged and congested as to seriously interfere with the entrance of air into the alveoli and result in a condition which produces the same physical signs and the same evil effects as true consolidation. With the available respiratory surface much decreased, the efforts to expand the chest tend to overdistend the remaining alveoli, and this, aided by the expiratory pressure during cough, when the glottis is closed, may rapidly cause emphysematous dilatation of the vesicles, especially those along the anterior borders, where the lung, being thin, receives less support from the surrounding tissues.

If a lung from an extreme case, combining all these factors, is examined when first removed from the thorax, it presents an instructive study. The anterior borders of both lungs, and especially of the upper lobes, are smooth, tense, and prominent, rising sharply above the adjacent portions and having the pinkish-white color of distended lung. Closer inspection shows that the individual alveoli can be seen by the naked eye, while in places along the edges of the lobes larger distended alveolar spaces are readily apparent, due to the coalition of several vesicles. These emphysematous portions of the lung remain inflated because the natural contractile power of the lung is alone insufficient to drive the contained air through the accumulated secretion in the bronchi.

In close proximity to these emphysematous portions, or even extending into them or surrounded by them, may be seen depressed atelectatic areas, large or small, of a bluish or bluish-black color, where the occlusion of one or more terminal bronchi has caused the collapse of the area to which it gave access, while scattered over the rest of the lung are the true broncho-pneumonic areas, often upon the posterior surface and the lower dependent portions, but quite as often elsewhere, around the root of the lung, on the surface between the lobes, in the cardiac lingula, or in the right middle lobe. They are irregular patches of a dark-red color which are firm to the touch and have a coarse granular feel, rising above the level of the atelectatic patches but not so high as that of the emphysema.

Around some of these again, and contrasting both in color and resistance, may be seen violet-red areas of congestion, which are readily inflated; but the hyperæmia which has given signs during life does not always persist after death. In some lungs we find small dark areas of lobular outline which are shown microscopically to consist of groups of alveoli whose cavities are filled with red blood-corpuscles only. These have, presumably, escaped by diapedesis from the engorged capillaries of the alveolar walls, which are seen to be distended with red cells. On section, the broncho pneumonic areas are of a dark or light red, or grayish or yellowish pink, according to their age and the proportion of white cells in the exudate, and by pressure yellow purulent secretion may be made to well up from the opening of the smaller bronchi. Microscopically, the contents of the alveoli is similar to that in lobar pneumonia, though with less fibrin, but the essential difference lies in the infiltration of the walls of the bronchi and the interalveolar partitions, so that the disease is not only one of exudation but of proliferation.

The atelectatic portions, which are often superficial, vary much in the degree to which the atelectasis is developed. If this is extreme, they have the consistence of muscle, are flaccid, and do not crepitate on pressure, if they contain no air. Theoretically, also, they should for the same reason sink if placed in water, but often enough air remains in bits of tissue to buoy it up. Part of these lobules may still be inflated, although later inflammatory changes usually develop.

While I have given above the outline of what may be considered as strictly broncho pneumonia, it should yet be remembered that there are cases of secondary pneumonia in which the areas of lobular involvement have no connection with the bronchi.

But it is not my desire to dwell upon the pathological or morphological aspect further than is necessary to throw light upon the course of the disease and its physical signs.

The symptoms and course of broncho pneumonia depend so largely upon coexisting conditions, especially in those cases secondary to the infectious diseases, that it is more difficult than in lobar pneumonia to present a classical picture. In the primary cases there exists for a day or two a bronchitis which may be considered the first stage of the disease, and it is noticed that the cough becomes more frequent and hacking, the temperature rises, the face becomes anxious, the respirations more rapid, and the alæ nasi dilate with each inspiratory effort. When the process in the lung has advanced the child lies limply in its mother's arms, its face pale or livid, its skin hot and dry. In nursing or drinking it stops every few moments to struggle for breath. The lips are cracked, and the tip of the tongue often dry. If the chest be uncovered, the respiratory struggle becomes more apparent. Open mouth and dilating alæ nasi do not suffice to give it air. All the accessory muscles are called into play, but the consolidated and occluded portions of the lung can not expand, a partial vacuum within the chest is formed, the episternal notch, supraclavicular hollows, and epigastrium are sucked in with each breath, while deep furrows are formed in the intercostal spaces and the less resistant chest wall is drawn inward along the insertion of the rapidly contracting diaphragm. The respiratory center attempts to substitute speed for depth, and the respirations rapidly increase to seventy to eighty per minute. The pulse becomes 160 to

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* *Pathol. Anat. of Bronchitis.*

200. Each advance of the process in the lung, each transitory congestion, each area of collapse, adds to the intensity of the dyspnœa, and, unless relief comes, the respirations become more shallow, the pulse more rapid and feeble, the face assumes an ashen-gray color, and death ensues.

If, however, a happier issue obtains, the pulmonary obstruction decreases, respiration is accomplished with less effort, the sinking in of the chest ceases, the temperature declines from day to day, the pulse improves, the face assumes a better color, appetite returns, and convalescence is slowly established. It must not be supposed, however, that all cases follow these definite outlines or rise to this degree of severity. In no disease of childhood, perhaps, are there so many variations, such sudden changes, such prolonged suspense, such disappointing relapses.

In the above description I have purposely omitted all reference to the physical signs, because no greater error could be promulgated than an attempt to make them conform to any fixed standard. To them, or rather to the exact underlying condition of the lungs, pertains the greatly diversified interest of these cases. Upon the daily, almost hourly, changes in the lung depend the course and the prognosis, our hopes and our fears.

We have inflamed bronchi lined with swollen mucous membrane, filled with muco-purulent secretion, and giving rise to almost every variety of râle, sibilant and sonorous in the early stages, fine and coarse moist sounds in the later. These may be further modified as they come to the ear, depending upon the condition of the tissues through which they pass, and may have a ringing, metallic sound, or be harsh and crackling. Sudden atelectasis may give diminished or absent breathing where before there was a vesicular murmur. Subsequent changes may give rise to modified resonance or dull tympany. Existing atelectasis may disappear as suddenly as it came. The congestion which we found preceding or accompanying lobar pneumonia or existing by itself is even more important here. It may result in partial dullness, with diminished or broncho-vesicular respiration. It may change rapidly from place to place. It may be here to-day and gone to-morrow. Emphysema even helps forward the confusion and uncertainty, for it may be so near or so surround the patch of true consolidation that its hyper-resonance prevents the recognition of the dullness; and the exaggerated respiratory murmur may completely conceal the faint or distant bronchial breathing. Fibrinous pleurisy, although often present, seldom gives distinctive signs. Enlarged bronchial glands by pressure on a bronchus may cause diminished breathing.

We turn at last to the broncho-pneumonic consolidation for clear and unmistakable signs, but here again we are met with disappointment. We have seen already with what varying distribution and in what diverse forms these areas may appear. Sometimes in narrow zones about the bronchi, sometimes at the root of the lung or between the lobes; again in such small superficial areas as to furnish no clew to its existence, while only a moderate number of the consolidated areas give us definite and unequivocal signs.

You ask me for what purpose I have catalogued the exceptions and emphasized the difficulties. I answer, Because in these very variations unmentioned by the usual text-books lie the characteristic feature of the disease. Because the very things which would otherwise puzzle us and cause us to doubt the accuracy of our observations and even the evidences of our senses now point us unerringly to the diagnosis. Because, also, it shows us that we have of late years swung the pendulum too far in the direction of physical exploration and too far away from the careful semeiological inspection of the patient which Fothergill, as one of the last of the old school, tried so hard to impress upon the rising generation. In short, with certain conditions of the temperature and respiration, together with uncertain or shifting physical signs, we may feel as confident of our diagnosis of broncho-pneumonia as if we had discovered unmistakable signs in the lungs.

Let us see, however, whether it is not possible to bring order out of chaos and gain a clearer idea of the physical signs and their interpretation.

The broncho-pneumonic areas may vary from a slight exudation into a few alveoli immediately surrounding a bronchus and showing nothing on inspection, through the grades of larger visible zones about the bronchi, to the extensive consolidation of large portions of the lungs. The process is usually bilateral, though often patches large enough to be seen or to give physical signs are limited to one lung. When the patches of consolidation are small, or superficial, or disseminated, the difficulties are the greatest; when they are large and deep and the signs distinct, there is no difficulty in their recognition.

Exaggerated resonance may be elicited over the apices, especially anteriorly, where the emphysema is most commonly found. Normal resonance, with subcrepitant râles, usually indicates the presence of bronchitis only, but it is, of course, possible that areas of hepatization may be present, though so small or scattered as to add no signs. Much that is of value may be learned from close attention to the râles, for their coarseness or fineness corresponds more or less closely to the size of the bronchi involved, and their number to the intensity of the involvement. Where they are numerous and fine and the respiration embarrassed, we may suspect the presence of disseminated consolidation, although no other signs be present. Modified resonance indicates congestion or hepatization. Distinct dullness may be considered the exception rather than the rule.

A most important matter, however, is this fact: That both consolidation and fleeting hyperæmia give identical signs, and it is necessary to have it firmly impressed upon our minds that only repeated examinations will determine the fixity or mobility of the signs, and so decide definitely with which process we have had to deal. Thus, if the signs of consolidation disappear in twenty-four to forty-eight hours, we know that we have dealt with an area of congestion; but, if it persists, that it is hepatization. While, again, if it comes and goes, and finally returns to stay, we know that congestion, like a troop of horse, has swept hither and thither, preceding and concealing the main body of true consolidation, which was slowly advancing to occupy the territory.

There are frequent instances in which the atelectasis, congestion, and tenacious bronchial secretion tend to prevent the entrance of air into the disabled lung, there is diminished breathing over the affected area, and the râles conceal its faint bronchial character. In these cases the compensatory efforts of the other lung are attended with loud consonant râles and harsh exaggerated respiration. Here the temptation to the careless or superficial examiner is always to locate the lesion where there is the most noise. No portion of the chest should be omitted in the examination, for the sides and the axillæ, the right middle lobe, and cardiac lingula are as often involved as the apices or the bases.

The temperature charts of broncho-pneumonia exhibit no characteristic course. The febrile period, corresponding to the active process in the lung, is of longer duration than in lobar pneumonia; it declines by lysis, and it shows greater daily variations. Although several charts placed side by side show no special uniformity, there are several general rules which have been deduced after careful comparison of the charts with the record of the physical signs. The extensions and recessions of the inflammatory process in the lung are thus seen to be registered, to some extent, upon the temperature chart. Thus bronchitis of the large and medium-sized tubes causes moderate elevation of temperature with partial morning remissions. When the finer bronchi become involved the elevation is greater, even to 104° or more. Congestion of fresh portions of the lung shows itself by sudden, sharp exacerbations of temperature as it develops, and equally sharp falls when it disappears, the degree depending upon the amount of lung involved and the intensity of the process it accompanies. Hepatization reveals itself only by its tendency to maintain the curve at a more uniform level.* Thus, as these three factors—bronchitis, congestion, and hepatization—ingraft themselves with varying intensity upon different portions of the lung, they are reflected in an infinite variety of combinations upon the record of the temperature.

The favorable cases, from a prognostic standpoint, are those which run their course between 101° to 104·5° F. Patients with an excessively high temperature usually die, as do those in whom it never rises above 101° F., or is even subnormal throughout. In these latter cases the low temperature seems to be an index of the feebleness and low vitality of the child.

The mortality has been estimated to vary from thirty to seventy per cent., according to the age of the patient and the circumstances under which the disease develops. The younger the child, the greater the danger. Among the primary cases the previous condition and constitution of the patient are important factors. Among the secondary cases the severity and nature of the primary affection must be considered. Cases complicating measles and pertussis give us our highest mortality. Institution children succumb readily; the children of the well-to-do fare the best. The physical signs are of but moderate assistance, remembering that extensive lesions may be so situated as to give no signs, and that extensive signs may represent superficial and transitory lesions.

It is, after all, to the rational signs that we must turn for our prognostic view of the case. If the respiration becomes superficial, or the cough ceases, or the skin becomes ashen gray, death will ensue if relief is not quickly given. The influence of low and persistently high temperatures we have already seen. Moderate increase of the consolidation is not as bad as extensive congestion or atelectasis. A sudden exacerbation of the catarrhal bronchitis may cause death in a few hours from suffocation.

Favorable cases defervesce in from seven to twenty-one days, though cases may run on for weeks, and the chances of recovery in these prolonged cases steadily decrease with the lapse of time. Resolution requires seven to fourteen days for its completion, for here there is not only the exudation into the alveoli, but the infiltration of the interalveolar connective tissue and the walls of the bronchi, which must be absorbed. Occasionally it extends over a period of eighteen to twenty-eight days. In some instances resolution does not occur for many months and then gradually takes place. In others the walls of the air-spaces become thickened, the alveoli themselves may even be filled with organized tissue, and a chronic fibroid condition results, with contraction of the lung and chest and subsequent dilatation of the bronchi. If the area involved be large, these latter cases, with rare exceptions, do not survive long, but die of intercurrent disease or develop tuberculosis.

Very little time is left us for the consideration of the treatment. As the indications for both forms are similar, they can be spoken of together. Many years ago pneumonia was treated by bloodletting, calomel, and especially on the continent by large doses of the emetic drugs—ipecac and antimony—until Barthez * stated that in his opinion meddlesome medicine prolonged rather than shortened the course of the disease, if it did not, indeed, largely increase the mortality. A more intimate knowledge of the affection now directs our more intelligent therapeutic efforts. The propriety of prophylaxis needs but to be mentioned. Prompt attention to all minor inflammatory conditions of the air-passages is to be insisted upon and as quickly dismissed.

What, then, is the rationale of the modern treatment of the disease itself? As pneumonia is a self limiting malady, we adopt the expectant plan of treatment. Temperature, heart action, and respiratory function give us our chief indications for interference. Although the deleterious influence of prolonged high temperature upon the tissues is well known, cases vary greatly in the degree to which they show these evil effects. It is rather the effect of the temperature upon the heart, the brain, and the nervous system which we should consider rather than its height in degrees. Each case must be judged by itself. If it is producing deleterious effects, it should be promptly combated, and to this end the bath or the wet pack are undoubtedly the best measures, for they do not act alone by the abstraction of heat, but are stimulant as well as antipyretic. Not only does the bath produce a subjective feeling of comfort in the patient, but it stimulates the cutaneous vessels, restoring their tone and relieving the overburdened heart; it also calms the central nervous system, removes delirium, favors sleep, and restores the nervous control over the heart and the functions of the other organs.

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* Cadet de Gassicourt. *Maladies de l'enfance*, Paris, 1886.

* *Mém. de l'Acad. de médecine*, Paris, 1862.

I have purposely avoided the use of the word "cold" in referring to both baths and packs, for there are conditions where the rectal temperature registers 105° to 106° F., but the surface of the trunk, and especially of the extremities, is cool and the shock of a cold bath would be a source of great danger. The temperature of pneumonia yields more readily to the water treatment than that of typhoid fever, and a bath at 95° F., cooled slowly by the addition of cold water to 85°, or in sthenic cases to 75°, and continued for ten to fifteen minutes, is sufficient to produce a reduction of 2° to 3° in the temperature. Exactness is as necessary here as elsewhere, and the watch and the bath thermometer are as indispensable to the bath as the scale and the graduate to intelligent medication. During the bath friction should be applied by the palm of the hand to the surface of the body, and on removal the patient should be wrapped in a blanket, or sheet and blanket, and allowed to rest for a time undisturbed. Stimulants may be necessary both before and after the bath.

Still better and far more convenient is the wet pack, the child being wrapped up to the neck in sheets wet in water at 75° to 85° F., and covered with a blanket. These may be changed several times at intervals of ten minutes, the last being allowed to remain for half an hour. Twice or three times a day will usually be sufficient. The other antipyretics are not to be entirely discarded, but, if used, their depressant effects must be remembered and they should be guarded by the administration of stimulants.

More important, however, than the temperature is the respiratory function. The danger to adult and child from pneumonia rests upon entirely different bases. In the adult the respiratory muscles are well developed and the strain comes on the relatively weak right heart and the danger is cardiac failure. In the child, however, the two sides of the heart have more nearly the same power, but the thorax is yielding and the respiratory muscles have not reached their full development. Accumulation of secretion in the bronchi, congestion, and atelectasis are therefore especially to be feared. Emetics to empty the bronchi are but rarely indicated, because of their depressant action. This indication is best met by sustaining the strength by proper feeding and the administration of stimulants, digitalis, strychnine, alcohol, or carbonate of ammonia. Congestion should be avoided or combated by counterirritation to the chest, by mustard pastes, mustard baths, the application of camphorated oil or turpentine, and olive oil, equal parts, and the use of the oil-silk jacket. In some cases dry cups are of great service.

I have only been able to allude hurriedly to these few important factors in the treatment. In conclusion, I desire to emphasize—

1. The frequency of true lobar pneumonia in young children.

2. The misleading character of the cerebral and gastric types of lobar pneumonia.

3. The fact that pneumonia is often overlooked, and the necessity of repeated examinations of the chest in all sick children, especially of those with persistently high temperature.

4. The importance of examining all portions of the chest.

5. The very variable distribution and extent of the broncho-pneumonic lesions.

6. The importance, both from a morphological and from a clinical standpoint, of emphysema, atelectasis, congestion, and intra-alveolar hæmorrhage.

7. The frequent discrepancy between the physical signs and the symptoms of broncho-pneumonia.

8. The falsity of the impression that distinct signs of consolidation are necessary to the diagnosis of broncho-pneumonia.

19 West Forty-sixth Street.

THE DIAGNOSIS OF TUBERCULOSIS BY TUBERCULIN INJECTIONS.*

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CLIMATES OF THE UNITED STATES IN COLORS, ETC.

In this discussion of phthisis I think I do well to try to present one phase only at this time, because of the great extent of the field to be gone over.

Then, having settled upon my portion, it may be of interest to you who are present for me to say that by my invitation three physicians should be here with us who have taken either the tuberculin (Koch's) or tuberculocidin (Klebs's) treatments under very discouraging conditions, but with positive benefit, of which any fair physical investigation would give abundant proof.

This is worthy of note, for the virtues of tuberculin have been appreciated by very few physicians, the great majority contenting themselves to go with the strong current against its use, which set-back was the natural result of the first overzealous and too sanguine expectation.

In the absence of uniform positive demonstration in tuberculin's favor, hearsay reports are quite sufficient for doubting minds, and careless statements about reinfection, or the alleged discovery of the *Bacillus tuberculosis* in the tuberculin of Koch by zealous and unreachable opponents in foreign lands are accepted as conclusive evidence of the worthlessness of the new remedy.

This conclusion is reached, notwithstanding the announced method of preparation of the lymph, by heating to 400° F. and filtering through porcelain, a process which is then proved, as we understand, by microscopic examination, to free the remedy from any germ life whatever. On several occasions I have verified this freedom of the lymph from the *Bacillus tuberculosis.*

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* Read before the Denver Medical Association and Arapahoe County Medical Society, November 14, 1893.

It would probably be better if the mistakes of experimenters were attributed to causes which are more within our reach, such as, among others:

1. The lack of due discrimination as to which are suitable cases for this particular treatment.
2. The indiscriminate dosage, regardless of the favorable conditions and environment necessary to success.
3. The looseness and inadequacy of technique in administration and the want of method in recording results.
4. The lack of a thorough appreciation of climatic conditions and the defective lung ventilation, especially in bedfast cases and acute phthisis.

It is unfortunate for the affirmative side of any such discussion that this question of *diagnosis* should have to be introduced, but it is really a vital part of the matter.

It is not my purpose to throw undue discredit upon our means of diagnosis of phthisis in its incipiency. Theoretically, so far as our text-books go, the profession may seem to be well fortified for the work, but practically, whether due to defective means, method, or conception on the part of the physician, there are too often cases of evident tuberculosis unrecognized till such a time that the most favorable season for arresting the process has already passed.

Without here going into the details of the early physical signs of phthisis, it is sufficient for our present purpose to show that in these uncertain and doubtful cases Koch's new discovery, tuberculin, has the power to bring to our knowledge their true nature and extent with precision and gratifying certainty. For the proper appreciation of this wonderful power some familiarity with or knowledge of the local reaction of the remedy in tubercular lung tissue is necessary. In my report on Tuberculin and the Living Cell to the American Climatological Association in 1892, I reiterated what I believed I had been the first to discover the previous year—that this reactionary effect "consists mainly in a harsh, puerile, or an exaggerated broncho-vesicular breath sound, as heard with the stethoscope over the affected area. This is an exaggeration of what was heard before the tuberculin reaction, or it is heard in localities in which the breath sound was previously inaudible or very different. It is not an evanescent effect, but usually continuous, though in a lessened or lessening degree during the whole course of treatment."

Sometimes this local lung reaction is very feeble, while the systemic reaction, as shown by temperature, pulse, etc., is quite marked and characteristic. The following is an excellent illustration of tuberculin diagnosis in a case where neither the physical signs nor a microscopic examination of sputum could satisfy my decided suspicion that the case was of a tubercular nature:

Case I.—Mrs. K., of Chicago, aged twenty-four years, married four years, height five feet four inches. No inheritance to consumption. Seen a week after arrival in Colorado. Weight a hundred and two pounds, usual weight a hundred and thirty pounds. Gradual loss of weight since a miscarriage two years previously, after which she had *la grippe.* While at school, aged sixteen, had dry cough and irritation in the throat thereafter. Free from this two years in Europe, and then worse in 1889. Lately a wheezing and stuffed-up condition toward evening; sometimes had to sit up all night and frequently had to go to an open window at night during the past year. This was evidently a case of complicated asthma, for there was considerable relief of the hard breathing on arrival in Colorado. Expectoration half an ounce per day, dark yellow; cough spasmodic, circulation poor, patient pale, but catamenia regular. Pulse 94, respiration 20, temperature normal. 10 A. M.: Spirometrical record a hundred and twenty-five cubic inches; manometer, forty five millimetres. Chest expansion two inches, evenly proportioned to the two sides. The physical signs were not very marked. The expiration was generally prolonged. There was tympanitic resonance over left main bronchus, and cogwheel respiration and blowing expiration in the left mammary region. Feeble voice sound and broncho-vesicular respiration left apex rear. On the right there was slight dullness and broncho-vesicular breathing front and rear at apex, and voice somewhat exaggerated rear. There were no bacilli in the sputum. The diagnosis was asthma and probably broncho-tuberculosis, and it was decided to test the case with tuberculin. The following diagrams show the characteristic tuberculosis reaction to tuberculin, so far as the pulse and temperature are concerned, taken four times a day, according to the method I have employed for three years.

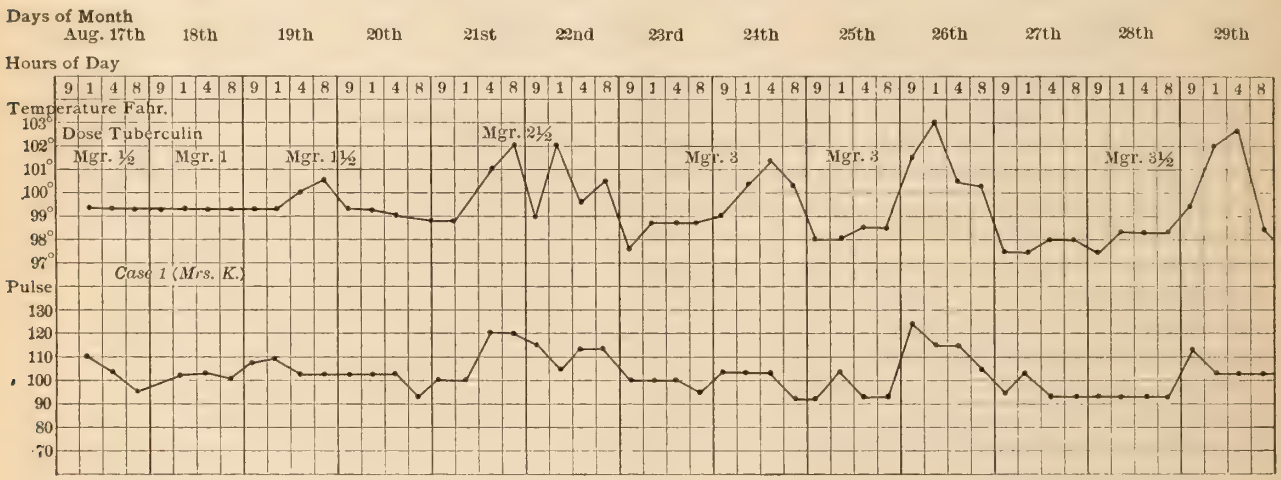
The local lung reactions were first manifest, after the two-and-a-half-milligramme dose, in the left mammary, where the cogwheel breathing was before, and on the right side, junction of the third rib and costal cartilage. After the four-milligramme dose these stethoscopic signs were also noted above in both first interspaces. These sounds were accompanied, when the temperature rise was great, with decided general reactionary symptoms of slight chill, fever, malaise, and headache. The sounds, however, at first dry, became softer and less pronounced, as reactionary signs subsided, till they were about gone at the sixty milligramme dose, when the patient, much improved in weight, strength, feelings, and freedom from the old spasmodic coughing spells, did not react, though a rise of ten milligrammes every third day was given thereafter till a dose of eighty milligrammes was reached.

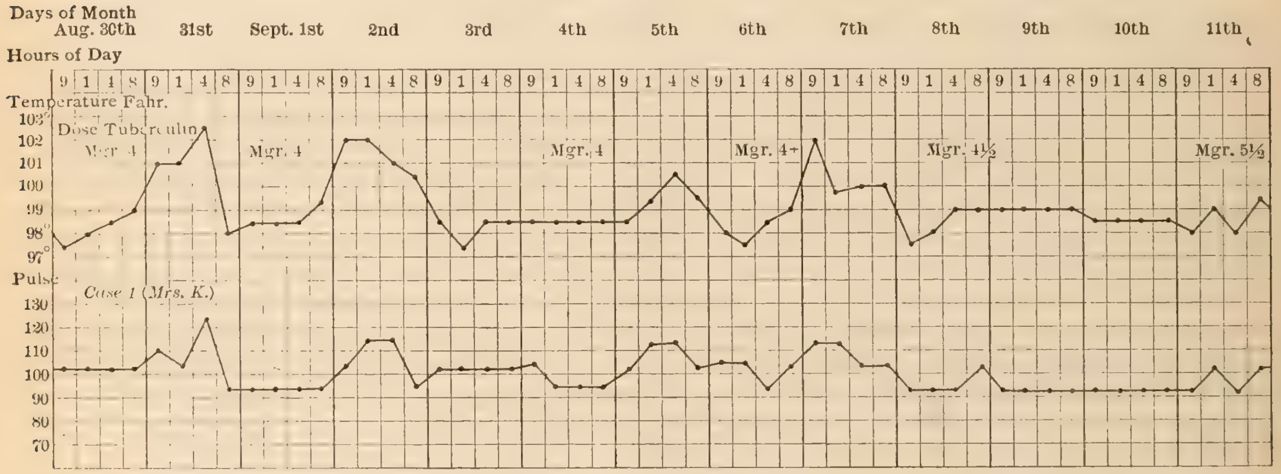
Note that the dose can be increased much more rapidly in such a case than in one in whom there are any advanced tubercular lesions in the lungs. In the latter condition, of course, such marked temperature reactions should not be tolerated. Note also that the general reactions, as indicated by the temperature rise, reached its maximum on the day following the injections. From this fact alone it is reasonable to conclude that the general dyscrasia exceeds any existing local lung lesion. I conceive that the more rapid capillary circulation in lung tissue—five times more than in the periphery of the body—may account for some of the quick reactions (in three to five hours) in tubercular lung tissue.

In my considerable experience with tuberculin (Koch's), and lately with tuberculocidin (Klebs's), this gratifying diagnosis and result has been exceeded, for certainty of effect, by only two cases, which are worthy of more extended mention than we can give them here.

Case II.—Dr. G., of Vermont, aged thirty-eight years. Positive inheritance, his mother and five sisters, out of seven in family, having died of consumption. His wife had died of tubercular meningitis three years previously, from whom he may have been infected, as the disease was general in her. He had had a seton put in the back of his own neck twelve years ago for meningitis, which it seemed to relieve, and eight years ago had suffered fracture of the ribs, with septicæmia resulting. Three years ago had *la grippe* and double pneumonia, chiefly right side. Sick six months. Came then to Colorado, and gained seventeen pounds in as many days.

November 20, 1892.—After a cough in Vermont, had what was termed basilar meningitis; sick since. Headache continuous, and lately very severe up to April 20, 1893, when (in Colorado) the following-described relief came: There was no expectoration to examine, and only slight dullness, lessened movement, fremitus, exaggerated voice, and broncho-vesicular breath sounds on the right side. The temperature, pulse, and respiration were found to be about regular for two days—98·5° F., 60, and 20, respectively—when one milligramme of tuberculin was injected. The genuine diagnostic reaction did not start till twenty-two hours afterward, and then was chiefly general and not local in the lung. It was manifest by temperature 100·5° F. and pulse 82 to 90, and continued more or less for about fifteen hours, during which at one time he vomited. The day following its cessation a slight increase in dose of tuberculin was given, which was followed, in four to six hours, by a slighter reaction than before. By that time the headache had entirely ceased, and the patient, who had been confined in bed for four weeks, was enabled thereafter to be daily out of doors with comfort. The constriction about the base of the brain, which was marked with the first reaction, gradually disappeared. In less than four weeks, after reaching a dose of thirteen milligrammes and feeling well able to do so, the doctor returned to his Vermont home, where he has been engaged in practice since, enjoying, so he writes, good health. This remarkable case is given as possibly the first diagnosis on record of tubercular meningitis by tuberculin.





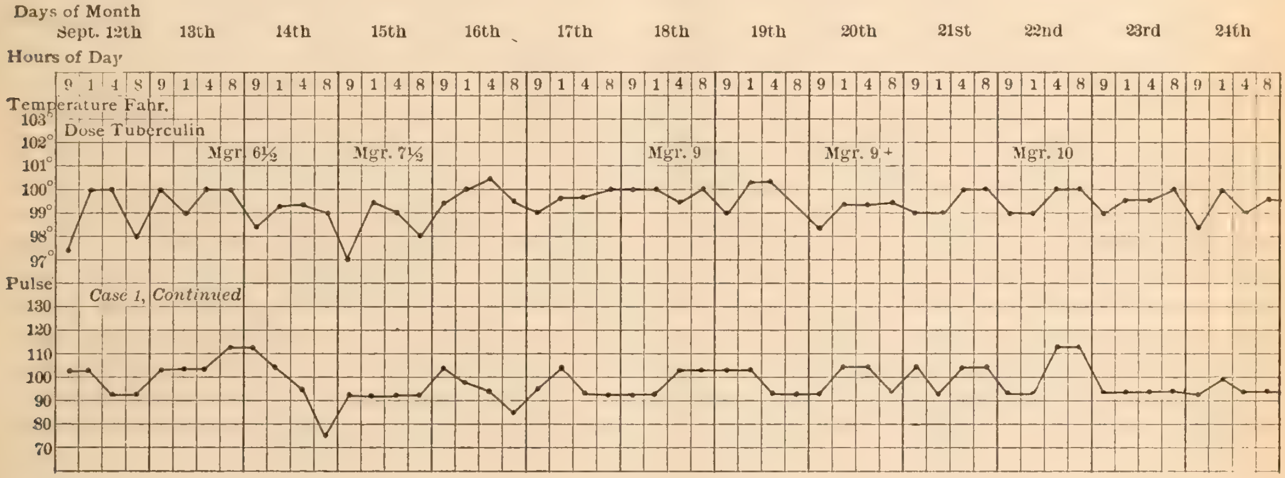
Case III.—A case of tubercular arthritis in both knee joints in a young lady of twenty-eight years, who was taken thus while nursing a sister in an Eastern sanitarium, who died of tuberculosis of the bones of the pelvis and spine. Three years afterward, after having tried several kinds of surgical treatment in hospital, the patient referred to submitted to a test with tuberculin at my suggestion. She had lost the use of her limbs and was compelled to use a wheel-chair for locomotion. The reaction at the third, sixth, seventh, and ninth milligramme doses of tuberculin were both general—*i. e.*, headache, malaise, some fever and general distress, and somewhat local in the left lung, where at the age of sixteen she had suffered some slight disease.

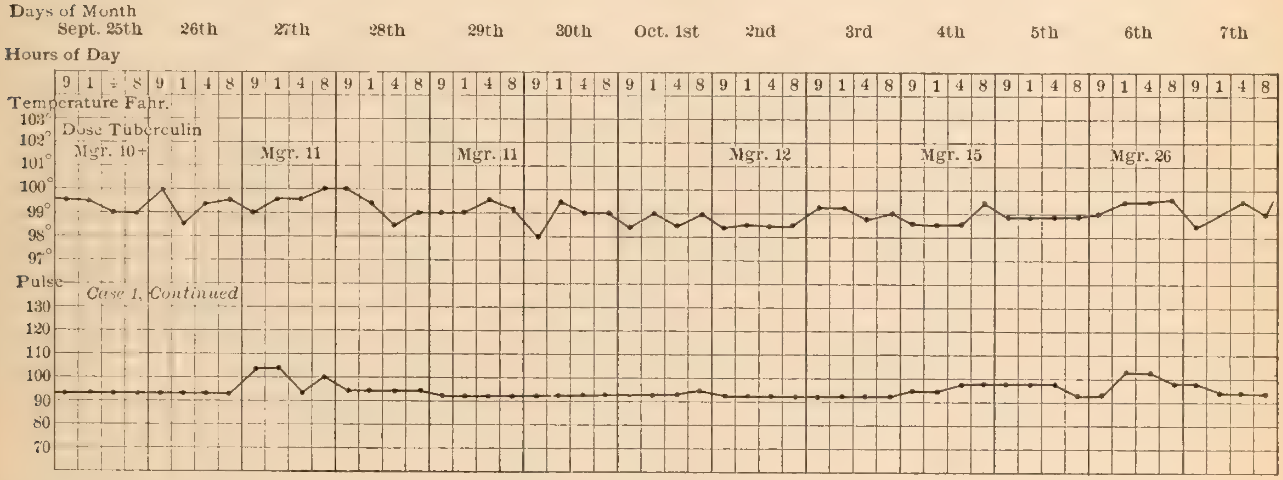
Seven months after this diagnosis an attack of *la grippe* seemed to center the tubercular poison in the glands on the left side of the neck, which, being removed, showed tubercle bacilli in giant cells in the center. This confirmation of the previous diagnosis led to a continuance of the tuberculin treatment in Colorado from October, 1892, to May, 1893. The result has been successful, for the young lady, now in Vermont, enjoys excellent health, and walks considerable distances without her crutches.

Other instances of decided diagnosis of tuberculosis if cited would include two cases of tubercular ulceration of colon; lymphadenoma, with general glandular involvement; scrofular cases (glandular); and supposed pulmonary fibroses.

An important consideration to be drawn from some of the above and other of my cases is that there is an active tubercular stage—pretubercular, if you wish to call it so—before the bacillus of tubercle makes its appearance as a factor in the case, so far as we are able to judge.

I do not refer to such manifestly tubercular cases as where the full picture of an acute phthisis is given, excepting the bacillus of tubercle microscopically demonstrated in the sputum, perhaps as with a young lady patient I have in mind, whose expectoration was loaded with spores one week, and the next gave fifty bacilli "to the field," the first found in her case. Nor is reference intended to be made to other cases where active tuberculosis can be inferred as going on away from the bronchial tract, and the more acute and septic on that account—*i. e.*, because the bacilli are not thrown off. But reference is intended to those intricate slowly acting blood changes which come under the classification of dyscrasiæ, which may be, for all we know, the *sine qua non* of the bacillus of tubercle's existence, that state which may indicate the more or less complete annihilation of the body's natural antagonism to this particular foe.





If our judgment and means of knowing the first appearance of the bacillus are not wholly at fault, then there is certainly enough in this idea of a definite pretubercular state to bring great credit upon him who will elucidate this interesting and important problem.

Among the phases of this subject to be solved, the following appear to me to be urgent: *

1. Minute explanations, on pathological grounds, of the adenoid growths in the region of the third tonsil, such as have been known to be removed *ad infinitum* by specialists, and no microscopic evidence of bacilli found either in the flesh removed or the patient's expectoration. Yet the patient goes on to die of laryngeal tuberculosis, as the gradually increasing peribronchial and apical infiltration and consolidation (immediately following the surgical interference in the throat) indicated what the result would be. Such a case is just now very distinct in my memory, and will recur to the mind of the distinguished physician who kindly recommended the case to me, but very unkindly and, I think, unwisely prevented my afterward using tuberculin in the case, the only means I know of which would have compassed a cure, however incomplete that would have been. The prejudice in the minds of some of our best physicians against even the advanced and enlightened use of tuberculin is as unreasonable as it is alarming.

2. An understanding of the absence of tubercle bacilli,

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* These considerations and some other parts of this essay are taken from my paper on The Early Diagnosis of Phthisis, etc., lately read before the Section of Hygiene, Climatology, and Demography of the First Pan-American Medical Congress held in Washington, D. C.

or their tardy and very infrequent appearance, compared with the amount of glandular growth in so-called scrofular glands, with or without a coincident active tubercular process in some other part of the body.

3. An understanding of the growth of tubercles—the "nodules" which have come down to us (previous to the discovery of the bacillus)—as the essential feature of phthisis.

As elsewhere explained in the essay on tuberculin, etc., previously referred to, I have myself a strong belief that these tubercles are the natural *prison vaults* built for the incapsulation of the tubercle bacilli, in which condition the germs, if not strangulated, are held so much in quiescence that they are incapable of propagation or further harm. This is a condition of arrest while it lasts, while the natural resistance of the system is maintained, which is, perhaps, about all Nature can do in the direction of a cure. But the natural effort to maintain the integrity of the living cell is all the time active, and its mention here is made solely with the hope that some more worthy investigator will by its means—*i. e.*, on natural gounds—elucidate for the medical profession the intricate problems here suggested.

The late distinguished president of the Royal College of Physicians, London, Sir Andrew Clark, with his usual diagnostic acumen and literary ability, formulated an elaborate argument opposed to the ideas of Professor Koch and his followers, but in favor of a *bacillary* and a *non-bacillary* classification of phthisis. How large a proportion of Sir Andrew's "*non bacillary*" class, including his purely fibroid variety, would have had to be transferred to the *bacillary* division is of course conjectural, but I suspect they would have constituted the total or a very large percentage had those cases been tested thoroughly with tuberculin injections. In my own experience it has been very largely the chronic bronchorrhœas and bronchiectatic cavities, of all the chronically affected lung patients daily expectorating yellow matter, which have shown neither bacilli in the sputum nor reaction to tuberculin injections. The failure to find tubercle bacilli in the sputum is certainly no adequate proof that tuberculosis does not exist. This statement will be accepted as true by every reflective mind, but upon me its validity has been impressed by eight or ten diagnoses by the aid of tuberculin injections similar to the first case given in this paper. In some of these, during the first part of the treatment, bacilli were found in the expectoration, which evidence again wholly disappeared as treatment progressed. But for such a diagnostic means the extent of latent tuberculosis among the people who walk our streets remains, as it always has been, a mystery.

Very likely an impression may be given that climatic influence may not be duly accredited in the foregoing effects, and it is extremely probable that neither the composition of tuberculin nor of the Klebs or Hunter modification of it are the best and safest possible. Like others, I look for something better, but, until that is found, I am glad that we have in tuberculin so good a referee to decide, in doubtful cases, if tuberculosis exists.

PEPSIN
AS A THERAPEUTIC AGENT IN SURGERY.

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Of all the therapeutical agents with which surgery has been recently flooded, there is none which has commanded greater attention and given greater satisfaction to the surgeon than pepsin in its application to diseased skin and mucous surfaces. Of course, ever since it was known to physiologists that the active principle of the gastric juice was a dialytic agent that acted merely by its presence without entering into any chemical relationship with the affected substances, it has also been known that pepsin had a peculiar elective affinity, separating non-vital from vital tissues with an accuracy of differentiation equaled only by chemical affinity itself. It is indeed strange that so long a time was allowed to pass in the history of medicine in which pepsin was not known as a therapeutic agent in surgery, although its action upon tissues had been so thoroughly demonstrated in physiology. My own experiments began in somewhat of a tentative way at the Pathological Institute in Berlin during the spring and summer of 1875. I was first led to its use while preparing tissues for the microscope. Being constantly troubled in my histological work by the presence of the *débris* of cell action which often obscured the definition of the structural cell under investigation, I cast about for something to clear away from the tissues everything but the *vital* structure, if I may so call it for present convenience, and I found this in *pepsin*, which effectually removed all the products of cell life—the *formed material* investing the active cell—and enabling me to produce a clear unobstructed view of the special cell of the structure under observation. From this I passed on to its use in pathological work, where I found it even more valuable in eliminating confusing elements. In many cases I must say, however, I failed in getting good results, on account of the inferiority or impurity of the pepsin used, and I have since attributed much of the skepticism of the medical profession and its hesitancy to accept with enthusiasm so valuable a therapeutic adjuvant to this very fact—the nature of the pepsin used, many preparations being so weak or so adulterated as to render the dialytic action outside the stomach almost inappreciable, and often indeed adding new complications to the microscopic appearance of the tissues. In embryology especially did I derive much value from peptic washings, and I have often received from the much-esteemed Dr. Orth, of Berlin, very flattering commendation for clearness of definition which I obtained by this use of pepsin, without informing him of my methods, as they were not those which he recommended himself. It was but a step from this use of pepsin to its therapeutic application, and one must have been blind indeed and passing dull who failed to follow a path so clearly blazed. However, as I was then wholly at work upon histological and pathological investigations, I reserved my observations upon this point to a time when I should have the opportunity to demonstrate the practical value of the therapeutic use of the agent to which I had been so much indebted for clearing up difficulties in cell differentiation. Just as is the case with most discoveries that are allowed to sleep—some one comes along and wakes them up—so with this. Some time after, when, in the activity of practical life, I had allowed the dust to settle upon histology and pathology, I was startled into a regretful sense of my negligence by noting in some of my journals accounts of the use of pepsin in indolent ulcers, in the removal of neoplasms and adventitious tissue of various kinds, etc. This stirred me into a regular series of experiments with pepsin as a local application to inflamed and otherwise diseased mucous membranes, and while I lost the right of discovery by my failure to follow up the legitimate inductions of my microscopical work, I was nevertheless enabled to demonstrate the value of an agent which I believe is destined to stand in the foremost rank of modern surgical therapeutics. No one who has not seen the change produced by the thorough peptonization of the whole surface of a jagged, lazy, indolent ulcer that has resisted every effort to excite granulation and awaken the dull vitality of the surrounding tissues can fully appreciate the immense possibilities of such an agent. The pale, livid edges light up with the reddening fires of vitality, wavelets of granulation swell up over the surface of the lesion, and soon healthy tissue reaches out cellular arms across the chasm and repair is rapid and complete. This is no fancy picture, as every one knows who has seen it and as every one may see who tries it. Then came the use of pepsin in eczematous eruptions, founded upon the same therapeutic principle, many of which seemed to vanish as if by magic at the first thorough peptic saturation. Mark the word *saturation*, for it is that which is required to get satisfactory results—a regular *pepsin poultice*, if you please—for here let me remark, it is to this namby-pamby dillydallying with remedies of pronounced effect that damages their character for activity in many cases.

Having found pepsin thus efficacious in the treatment of eczema—which, by the way, is made to cover a multitude of dermatological sins—it was natural to try its effect in other skin diseases, and whenever there was an exuberance of morbific cellulation, it always rewarded the experimenter beyond his most sanguine expectations. But I thought I had found the philosopher's stone, indeed, when I pushed my *a priori* therapeutic forces into the realm of *venereal* pathology, and, in a fit of desperation over a case of protracted gleet that seemed to be proof against the whole pharmacopœia, I took the patient, a very unusually submissive character, into my confidence, and proposed the digestion of everything in the urethra, from the meatus to the bladder, before applying anything else. To the astonishment and delight of us both, the effect was magical, and, after two or three applications, the case was cured. I say I thought I had found the philosopher's stone of therapeutics, as nowhere in the medical journals had I seen any account of such a use of pepsin, and I immediately began to experiment with various combinations, in all of which pepsin was the digestive agent, and, after finally preparing one which met all the indications for general use in gonorrhœa, gleet, and stricture, I was ready to create a great therapeutic sensation by announcing it as my own discovery, as indeed it was, so far as receiving any outside suggestions was concerned, when a letter from Messrs. Armour & Co. informed me that they had been recommending such a use of pepsin for "two *years past.*" While this announcement threw a little cold water on my enthusiasm, I was glad to have my investigations and their results confirmed by the suggestions of the gentlemen whose preparations had enabled me to do so much in this line of therapeutic work, and it is more especially to this action that I desire to call the attention of the profession, for there is nothing that will be hailed with greater satisfaction and joy by the practitioner than something which may be relied upon rationally as almost a specific in the cure of these troubles, which are the very bane of his life, and which do more to unsettle confidence in his skill and ability than anything else in his professional career. And without hesitation I can offer him this, which I have yet to see fail in a single instance to produce the results expected, however complicated the case.

I have had prepared for me a bougie lubricator, put up in boxes for office use, and I now never insert a bougie that is not thus peptonized, as it were. This ointment is adaptable to skin diseases, especially those of the itching variety, the pruritus disappearing frequently after the first application. I have also had prepared urethral, vaginal, rectal, nasal, and aural *soluble bougies*, made of pepsin and boric acid, with an active permeable menstruum by which cavities can be reached and treated locally.

In conclusion, I can not too strongly urge upon the profession the use of an agent that, in my hands, has produced such unvarying good results, and to the use of which fewer objections can be urged.

The following is the formula I use and the accompanying treatment:

1. Wash out the urethra thoroughly (always after urinating) with plain hot water, as hot as may well be borne.

2. With a syringe having a soft-rubber, conical-shaped nozzle inject the following:

Injection No. 1—

℞ Pepsin (Armour's)	ʒ ij;
Ac. boracici	gr. xx;
Infus. vaccin. macrocarp. (made from cranberries)	℥ j;
Aq. dest	℥ iij.

M. Sig.: Inject every three hours the first day.

Injection No. 2—

℞ Pepsin (Armour's)	ʒ ij;
Zinci acetatis	gr. x;
Aq. dest	℥ iv.

M. Sig.: Inject every three hours the second day.

After this, alternate the prescriptions until entirely cured, using the ordinary dietetic measures indicated in such troubles.

I shall be pleased at any time to answer any questions from physicians or pharmacists with regard to the preparation of this formula, and explain any difficulties that may arise in compounding it.

I have mentioned Armour's pepsin because, while it is far from my purpose to say anything that would savor of special pleading, it is only just to say that all of my work has been done with their preparations, and they have aided me in furnishing facilities for bringing it properly before the profession.

CONTRIBUTION TO THE STUDY OF THE SIMULTANEOUS DEVELOPMENT OF TWO DIFFERENT EXANTHEMATIC DISEASES.

By B. S. TALMEY, M.D.

It is the duty of every practitioner to make critical use of his own observations gathered at the bedside. The more numerous the publications, the more clearness they will bring and the better judgment they will create, particularly with reference to diseases about which there exist different views. I make the following communication with two purposes: the first, to give a contribution to the simultaneous development of two different acute exanthematic diseases; the second, to show to the medical profession the excellent results following the use of cold baths in acute infectious diseases.

Twenty years ago the possibility of two simultaneous exanthematic diseases was much discussed. The simultaneous development of scarlatina and varicella especially was a point in dispute because many observers, among whom were no lesser men than Hebra (Virchow's *Handbuch d. spec. Path. u. Ther.*, vol. iii) and Trousseau (*Clinique méd.*, vol. i), denied its existence. They considered the exanthema preceding the varicella which was described by other observers as due to scarlet fever as the prodromal rash of varicella which is almost regularly found as a diffuse dark red eruption occurring in large patches. At the same time a number of prominent physicians published several cases of simultaneous exanthematic diseases, of which I will only mention cases of scarlet fever associated with varicella. L. Thomas (*Jahrbücher für Kinderheilkunde*, vol. iv) published two cases: One, a child aged fourteen years, was seized first with varicella and then with scarlet fever; the other, a child aged one year and nine months, at first with zcarlet fever and then with varicella. Henoch (*Vorlesungen über Kinderkrankheiten*) also saw two cases—one a boy nine years of age with varicella first and scarlet fever afterward, the other a child aged four years with scarlet fever at first and varicella later on. Hirschsprung saw a girl eight years of age with scarlet fever at first and then with varicella. Brunton (*Glasgow Med. Jour.*) published a case of a child aged four years with varicella and scarlet fever successively. Matray (*Wiener medicin. Wochenschrift*, 1878, No. 78 and 79) describes a case of a boy, three years old, with varicella and subsequently scarlet fever. Galliard (*La médecine moderne*, 1891, p. 491) saw a case of scarlet fever followed by varicella. Hüttenbrenner (*Lehrbuch für Kinderheilkunde*) says: "There is no reason why we shall *a priori* deny the simultaneous occurrence of scarlet fever and varicella." The bacteriological experiments published about mixed infection by Fränkel and Feudenberg (*Ctrlbl. f. klin. Med.*, 1885, No. 45), Cooke (*Fortschritte der Medicin*, 1885, No. 20), Heubner (*Ueber die Scharlach-Diphtherie*, Leipsic, 1888), Lenhartzt (*Jahrbuch für Kinderheilkunde*, vol. xxviii), also show the simultaneous existence of several pathogenic bacteria in the human body. In fact, numerous cases of a combination of two or more exanthematic diseases have been published. Clinicians have, therefore, long been familiar with this fact, though the cases are not very frequent, and we must bear in mind that many of the cases published as scarlet fever combined with another exanthematic disease were incorrectly diagnosticated and the so-called scarlet exanthema was only the prodromal erythema of the disease following it. Still, there are many cases among them which show beyond any doubt the real existence of scarlet fever combined with another exanthematic disease. My present case also does not admit any doubt as to the right diagnosis. The history of the case reads as follows:

On Wednesday, November 23, 1892, I was called to Charles F., eight months old, who was suffering from sleeplessness and fever, and my diagnosis was scarlet fever. In order to avoid the infection of their older boy, the parents sent the sick child to the hospital. The next day the rooms were disinfected by the Board of Health, notified by the physicians of the hospital.

On Sunday, November 26th, the child died at the hospital. In spite of the precautions taken by the parents, their boy, Lewis F., two years and eight months of age, was suddenly taken ill on December 2d. I was again called and found *status præsens*: A healthy-looking, well-nourished child; numberless small red points densely crowded and united into a diffuse intense scarlet erythema on the neck, chest, abdomen, and flexor surfaces of the extremities, and pallor of the lips and chin. The rash was the characteristic exanthema of scarlet fever. The temperature was 39° C. (102·2° F.). The tongue had the well-known raspberry appearance. Inspection of the throat showed the fauces intensely congested, dry, but no membranous deposit. The child was extremely prostrated. It was continually somnolent and apathetic. There could be no mistake as to the diagnosis of scarlatina. The infection from his brother, who had died six days previous from scarlatina, confirmed the diagnosis. I ordered cold packs around the neck and chest and a dose of calomel on account of constipation.

In the evening of the same day the patient felt much better. The next day he was worse. The rash had now spread over the entire body. The same apathy and somnolence existed as on the previous day. There was a fresh rise of temperature to 41° C. (105·8° F.). I had to take heroic measures, and ordered gradually-cooled baths which I prepared myself. I gave from this day two to three baths daily, and succeeded in lowering the temperature by 2° C. after every bath. Apart from the baths, the patient took during the afternoon 0·5 gramme of quinine. On the 6th of December the scarlatinal rash had almost disappeared. The temperature was not higher than 37° to 38° C. The somnolence had ceased and the patient could now be considered as convalescent.

But on December 8th another rise of the temperature to 40° C. (104° F.) set in and the somnolence reappeared. The examination of the body revealed the typical eruption of varicella. The vesicles were of the size of a pea, several somewhat larger, with a small red areola. The vesicles developed upon the back, neck, a few upon the scalp, and one or two upon the mucous membrane of the mouth. There could not be any doubt about the diagnosis of varicella, particularly when, during the following days, repeated eruptions of fresh vesicles were found by the side of others which were drying up. I ordered the cold baths again and continued them during the fever period.

The amount of the urine during the afebrile period, from the 12th to the 17th, was diminished almost to complete anuria. I suspected, therefore, though I could not find any albumin in the urine, that nephritis was developing. My suspicion was justified. On December 17th the temperature rose again to 41° C. (105·8° F.), and on examination I found the urine turbid and high-colored, containing about one per cent. of albumin. The patient exhibited uræmic symptoms. I administered digitalis combined with kali acetici, calomel, and ordered hot baths—about 40° to 45° C. (104° to 113° F.). Until December 24th the patient was in a very critical condition. From that the temperature fell, and after three weeks the albumin in the urine had entirely disappeared.

The above-mentioned symptoms show the correctness of the diagnosis of combined scarlatina and varicella. The presence up to that time of an epidemic of scarlet fever in the city, the infection from the first child which had died from scarlatina in the hospital, the development of severe nephritis on the fifteenth day of the disease, and the character of the exanthema, do not admit any doubt as to the diagnosis of scarlatina. The diagnosis of varicella from the second rash was also plain to any practitioner who had but once seen a marked case of varicella.

I therefore desire to make but a few remarks as to the time of acquirement of the two diseases. Did the patient acquire both diseases at the same time from the same individual, or did he acquire them successively? Scarlatina appeared on the ninth day after the departure of the first child from home, varicella on the fifteenth day. Since the incubation period of varicella lasts from thirteen to sixteen days and that of scarlet fever generally from five to eight days, I have no doubt that the infection of both diseases took place at the same time. I also think that if the first child had not died on the fifth day of his sickness we might have also observed an outbreak of varicella on his body.

I mentioned above that I intended to show by this paper the wonderful results attained by the administration of gradually-cooled baths in acute infectious diseases. The reader, after careful perusal of this article, will admit that the patient was in extreme danger. The severity of the exanthematic diseases varies in different epidemics. During some epidemics almost every case is severe. Our patient acquired his disease from his brother who had died within four days. It could therefore, *a priori*, be expected that this child would also die. I am convinced that the life of our patient was saved only by the cold-water treatment. The cold baths have not only a powerful and beneficial effect upon the nervous system, and particularly upon the circulatory nerve centers, but they influence also the temperature in acute febrile diseases, as I have observed in hundreds of cases I treated during the time of my assistanceship at the Royal Polyclinic for Children's Diseases of the University of Munich. Particularly in exanthematic diseases in which an inflammation of the respiratory system is to be feared, the cold baths are the only treatment from which we may expect a satisfactory result. I did not derive great effects on the temperature from cold applications to the head, neck, chest, and abdomen, neither from cold packs, though they benefit greatly the pulse, cyanosis, respiration, and cerebral disturbance. I would therefore recommend to every general practitioner to make more use of gradually-cooled baths as applied by Professor von Ziemssen in typhoid fever. It is to be extremely regretted that in this country the parents and relatives of the little patients, when a cold bath is but hinted, are shocked and oppose the baths with all their power. If physicians make very little use of this powerful remedy the laymen do not get accustomed to it. In practice among the poor particularly we can, by administering cold baths, spare them many dollars which are carried to the druggist for antipyretics and expectorants.

Also in pneumonia I prefer the cold baths to any other treatment. Some time ago I saw a case of pneumonia in a child aged fourteen months. The father, himself a physician, would not allow me to use the cold-water treatment until the child was almost dying. At last he submitted, and the child recovered. The shock received by the child at the moment it is placed in the cold bath makes its breathing deeper and causes it to expectorate the mucus which remains in the bronchi during the superficial respiration in febrile diseases. The baths are therefore a preventive measure against the spreading of an inflammation in the lungs. Now, in all exanthematic diseases the lungs are apt to be affected. The cold baths are therefore the best means of preventing it.

140 West Sixty-third Street.

Dr. Morris's Operation for the Removal of the Vermiform Appendix.—By an accident, the cut illustrating Dr. Robert T. Morris's lecture, published in our last issue, was turned so that the top lay to the right and the bottom to the left. We learn that the error has puzzled some of our readers. To appreciate the cut, hold the journal sidewise with the head of the page to the left.

The Harvard Medical Society of New York City.—At the meeting held on January 27th the following officers for 1894 were elected: President, Dr. Reynold W. Wilcox; vice-president, Dr. Royal Whitman; secretary and treasurer, Dr. Dillon Brown; executive committee, Dr. J. Winters Brannan, Dr. Frank H. Daniels, and Dr. Howard Lilienthal.

Mounted Nurses in India.—A monthly allowance of thirty rupees is granted by the government in India to women nurses, employed on field service, for the keep of a horse, provided that during the period of such service a horse or pony is actually kept and used. The horse or pony is granted free conveyance from place to place whenever the assignment of the nurse is changed.

The First Japanese Lady Physician has recently been licensed to practice in Nagasaki, according to a Dutch journal cited by the *Deutsche Medizinal-Zeitung*. The lady's name is Marie Saganiana, and she is said to have obtained her medical education in Ohio.

The Marine-Hospital Service.—A board of medical officers will meet on Monday, April 16, 1894, in Washington, D. C., for the purpose of examining candidates for appointment to the grade of assistant surgeon in the Marine-Hospital Service. For further information address the supervising surgeon general, United States Marine-Hospital Service, Washington, D. C.

THE
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THE ATTITUDE OF THE STATE COMMISSION IN LUNACY

It would seem as if the New York State Commission in Lunacy had deliberately set out to bring contempt upon itself and disgrace upon the noble charities of this State. We recently pointed out the unfortunate political proclivities of the Commission in Lunacy, and the apparent object of this body to evolve itself into an enormous political machine. On all sides in the State these tendencies have been subjected to severe criticism from honorable men of every profession, and the voice of reproof grows louder every day as the lowering ambitions of the commissioners become clearer and clearer. In spite of these ominous warnings, the commissioners grip more firmly the rein of power already in their hands. Indeed, they seem disposed to use their authority to crush those who oppose the evolution of the political machine. Among the men who have openly and fearlessly discussed the positions taken by the commission is Dr. G. Alder Blumer, of the Utica State Hospital, one of the ablest superintendents of this State. In retaliation for this the commission stultifies itself thoroughly by an organized and vindictive persecution of Dr. Blumer. It is pretended to show that Dr. Blumer was not regularly appointed through the Civil Service Bureau of the State, and an attempt is made to wrest from him the conduct of the *American Journal of Insanity*, which has been published at the Utica Asylum for fifty years. In an interview published in the *Utica Daily Press*, Dr. Blumer makes the following statements:

"I have set my face resolutely against the attempted injection of politics into the management of State hospitals, and I have not hesitated to raise my voice and use my pen in behalf of local autonomy, under the wise management of trustees of high character, nominated by the Governor and confirmed by the Senate, subject, of course, to proper State supervision and inspection, and against a centralized despotism composed of two laymen and one medical politician. I have insisted upon my rights as the chief executive officer of a great public charity, and dared to decline to be regarded as a cog in what bids fair to become a monster political machine. My independence has cost me a good deal, but not more than it is worth. The story is too long for an interview, but, as aptly illustrating the animus of the Lunacy Commission, I should like to say a word about the *American Journal of Insanity*, a publication established in 1844, of which I have the honor to be editor in chief. Ever since the present Commission in Lunacy came into existence that journal has been a thorn in its flesh, because, forsooth, it has striven to live up to the claim of its title to nationality and has stoutly refused to lower itself, on demand and threat, to the grade of a servile organ of the Lunacy Commission. Several futile attempts have been made to wrest the editorship from me, but the latest of them so well exemplifies the high-handed methods of the commission that it is worth mentioning. It came in the shape of an opinion of the attorney general's office last October, to the extraordinary effect that, whereas, under chapter 214 of the laws of 1893, it was for the State Commission in Lunacy to pass upon supplies for the State hospitals, and revise estimates, as to quantity and price, it followed of necessity that it was also within the province of the commission to determine the propriety of a superintendent's devoting a portion of his time to editing medical publications. Under this rule the Lunacy Commission has already begun a policy of starving a scientific medical journal that has flourished, to the honor and credit of the Utica hospital, for fully fifty years. The superintendent's right to utilize his leisure time in editing, without pecuniary reward, a publication in the line of his professional work is questioned, but the president of the Lunacy Commission may be hired to testify in a Field case, without let or hindrance, imposed by either officer of State or conscience, and quietly pocket his fat fees, while the legal member of the commission permits himself the privilege of lecturing at Cornell University and the faculty that of paying him for his services, to say nothing of numerous *ex parte* articles prepared for the lay press on the lunacy situation as viewed from the southwest corner of the Capitol."

We can only say that it is unfortunate that this State, after years of prosperity and happy fame in the management of its great charities, should have its good reputation thus dragged in the dust. But the board's action is pretty sure to work its own destruction.

MINOR PARAGRAPHS.

MEDICAL SOCIETIES TOO EASILY FORMED.

The *Cleveland Medical Gazette*, speaking for the State of Ohio, remarks upon the too facile formation of medical societies. Every plausible pretext, it says, that can be hunted out is made use of in order to form all sorts of district, State, tri-State, national, railway, and specialistic bodies. And the men who "run" these societies are too frequently men of no real scientific attainments, and not always respected at their own homes. "In fact," it says, "they are too often the men who are in bad odor and who do not hold the esteem and respect of those who know them best, and consequently are obliged to go away from home, where they are not known, in order to secure these positions of honor. Not infrequently these men manipulate the State and national organizations for their own purposes as long as possible, and, when they are found out and turned down, they go off and organize a new society. And the pity of it is that the respectable, well-meaning, intelligent, scientific practitioners will go into these new organizations and lend to them a certain respectability; and, in fact, without the labors of these unselfish members of the profession they could not exist." The lesson from all this is that every physician who wishes to have his weight of influence felt should examine carefully the claims of all newly launched organizations, as well as ascertain the standing of their office-bearers, before embarking in them. If any socially inclined practitioner were to set out to join all the societies that appeared to have a claim upon him, if he were faithfully to go to all their meetings, and if he were to respond to apparently reasonable demands upon him for "papers or cases," he would have very little time left to get together "the sinews of war."

THE LOCALIZATION OF FACE MOVEMENTS.

Dr. Brissaud recounts in the *Progrès médical* some recent investigations of his on the cortical localization of face movements in man. His subject had exhibited recurring attacks of right hemiplegia, facial paralysis, and aphasia during life. An autopsy revealed the following conditions: Situated in the superior sulcus of the left insula, immediately posterior to the frontal operculum, there was a soft yellowish mass. It was apparently superficial, but on microscopical examination there were found to exist on the internal border of the left peduncle a number of granular bodies. A very careful inspection of the brain showed no other focus of degeneration. The frontal region of the left hemisphere presented several anomalies, but the line of demarcation between the healthy tissue and the lesion was easily made out. The author had no doubt that this lesion was the cause of the facial hemiplegia, but, according to the localization of leg and arm movements by other observers, there was no lesion of the brain to account for the paralysis of those members. There was an involvement of the orbital and frontal muscles, but this was explained by the continuity of the fibers of the projection system. It was thought, considering the very small focus of the lesion, that the deduction from this study of the center of localization of face movements in man was unique. The author definitely located this center on the ascending parietal operculum, immediately posterior to the inferior extremity of the fissure of Rolando.

CHLORINE WATER IN THE TREATMENT OF GONORRHŒAL OPHTHALMIA.

The *British Medical Journal* for January 6th cites Burchardt as favoring the use of chlorine water, followed by that of nitrate of silver in solution, in the treatment of acute purulent ophthalmia of gonorrhœal origin, in adults as well as in children. Formerly he carried out the classical routine of leeching, scarifying, cauterizing with nitrate of silver, and ice compressing. These have been dropped by him, one by one, because either they produced ill effects or they appeared to him irrational. He now relies on a free irrigation of the inflamed sac with a five-per-cent. solution of chlorine water. This is followed by a one-tenth-per-cent. solution of nitrate of silver. The patient's head is held back so that the face is directed upward; an assistant allows the solutions to fall into the inner canthus drop by drop, while the surgeon moves the lower lid up and down with his thumbs and moves the upper lid more slowly with one of the fingers. In this manner he is able to clean out the sac very completely. The success of the method, according to Burchardt, appears to lie in the free movement imparted to the lids, whereby the solutions gain contact with every fold of the conjunctival membrane. Shreds or membranous patches are removed from the conjunctiva after everting the lids.

PSEUDO-DIPHTHERIA.

An interesting case of recurring false membrane of the throat is reported in the *Journal of Laryngology, Rhinology, and Otology* for December, 1893. The condition of the throat as it first appeared was that of a diphtheritic affection, but thorough microscopical examination of the membrane excluded this diagnosis. The patches of yellowish membrane covered portions of both tonsils, the uvula, and half the soft palate, and the area immediately around the exudate looked red, vascular, and slightly œdematous. The whole membrane could be detached without hæmorrhage or immediate reformation, and the underlying surface became quite healthy and normal in a few days after its removal. There were no constitutional disturbances or even functional derangements. The curious feature of the case was the recurrence of the growth at intervals of from fourteen days to two months for nearly two years. Every effort to discover the cause of the trouble or to arrest a recurrence of the condition had failed. The only changes noticed were the tendency of the affection to spread toward the tongue and its not recurring so frequently in the pharynx. The case was under the charge of Sir Philip Crampton Smyly, of Dublin.

A NEW ALLY OF THE ANTI-VIVISECTIONISTS.

Can it be that M. Coquelin is at heart an enemy of experimental pathology? At the close of a recent rendering of *Les surprises du divorce* he is said to have made a remark that possibly will put him on the defensive in this regard. The audience encored the comedian, and after a slight delay he complied. The *Herald* says: "No wonder the audience was loath to go. And those who stayed a few minutes were well rewarded, for he came out and gave, with the diction that is peculiarly Coquelinesque, a favorite monologue of his, *La Chasse*, where he gayly avows 'Le plus que j'étudie les hommes, le plus que j'aime les animaux.'" There is an older saying, among the French, sometimes ascribed to Montaigne, that expresses a similar cynical feeling—namely, "The more I know about politicians, the better I like dogs."

AN ADVERTISING MISREPRESENTATION OF A PHYSICIAN.

Dr. Allan McLane Hamilton has sent us a copy of an advertising circular issued by the makers of a proprietary medicine purporting to consist of an article written by Dr. Hamilton, of which, however, he denies the authorship. He naturally protests against such a use of his name, and, we think, with good reason.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 30, 1894:

DISEASES.	Week ending Jan. 23.		Week ending Jan. 30.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	0	0
Typhoid fever	7	7	6	5
Scarlet fever	116	9	129	3
Cerebro-spinal meningitis	0	4	0	0
Measles	606	20	530	18
Diphtheria	225	65	210	71
Small-pox	27	3	27	2

The Methodist Episcopal Hospital, of Brooklyn.—This hospital has received a donation of $5,000 under the will of the late Mrs. Lucy Williams, of Pittsfield, Illinois. The gift is designed to endow a bed.

The German Hospital, of Brooklyn.—The institution has funds in hand amounting to $120,000. It is expected soon to lay the corner-stone, and when that has been done an increase of the endowment fund will be easier to accomplish.

The Randall's Island Hospitals.—Dr. W. Whitehead Gillfillan has been appointed attending ophthalmic surgeon to the hospitals on Randall's Island.

Changes of Address.—Dr. Frank S. Fielder, to No. 33 West Ninety-third Street; Dr. Charles A. Ring, from Buffalo to Johnson's Creek, Niagara County, N. Y.; Dr. C. Teubner, to No. 1840 Lexington Avenue.

The Death of Dr. Alexandra Petrowa, of Sebastopol, Russia, removes one of the older of the lady physicians who entered the profession soon after the ukase went forth allowing women to study medicine in St. Petersburg. Her age was forty-nine years.

The Death of Dr. Paul Diday, of Lyons, the well-known syphilographer, is announced in *Lyon médical* for January 14th as having taken place a few days before that date. He was in his eighty-third year.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 7 to January 26, 1894:*

Woodruff, Charles E., Captain and Assistant Surgeon. The extension of leave of absence granted is further extended one month and twelve days.

Kieffer, Charles F., First Lieutenant and Assistant Surgeon, is granted leave of absence for two months, on surgeon's certificate of disability, with permission to leave the Department of Dakota.

Moseley, Edward B., Major and Surgeon, is hereby granted leave of absence for one month on surgeon's certificate of disability.

Frick, Euclid B., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Keogh, Mont., and ordered to Fort Townsend, Wash., for duty at that post, relieving Ball, Robert R., Captain and Assistant Surgeon. Captain Ball, on being relieved by Lieutenant Frick, will report in person to the commanding officer, Fort Monroe, Va., for temporary duty.

Brewer, Madison M., First Lieutenant and Assistant Surgeon, will, upon the arrival of Captain Ball, be relieved from temporary duty at Fort Monroe, Va., and will return to his proper station, Fort Riley, Kansas.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending January 27, 1894.*

Biddle, Clement, Surgeon. Detached from duty at the Marine Rendezvous, Philadelphia, Pa., and to wait orders. Rendezvous closed.

Stone, E. P., Passed Assistant Surgeon. Detached from the Marine Rendezvous, Boston, Mass., and to continue on special duty in Boston, Mass.

Berryhill, T. A., Passed Assistant Surgeon. Authorized to take a course of instruction at the Naval Hospital, Brooklyn, N. Y.

Browne, J. Mills, Medical Director (retired). Granted two months' leave with permission to go abroad.

Neilson, J. L., Surgeon. Detached from the Naval Medical Examining Board and ordered to the Boston Navy Yard.

Marmion, R. A., Surgeon. Detached from the Boston Navy Yard and ordered to the Smithsonian Institution.

Gravatt, C. U., Surgeon. Detached from the Smithsonian Institution and ordered to the Dale.

Green, E. H., Surgeon. Detached from the Dale and ordered to the Marblehead.

Russell, A. C. H., Passed Assistant Surgeon. Ordered as a member of the Naval Medical Examining Board.

Berryhill, T. A., Passed Assistant Surgeon. Ordered to duty at the Naval Laboratory and Department of Instruction.

Babin, H. J., Surgeon. Ordered as a member of the Board of Inspection and Survey.

Du Bois, F. L., Medical Inspector, and Siegfried, C. A., Surgeon. Appointed delegates to the Eleventh International Medical Congress to be held at Rome, Italy, March 29 to April 5, 1894.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Five Weeks ending January 20, 1894:*

Bailhache, P. H., Surgeon. Detailed by the President as Delegate to the International Sanitary Conference in Paris, France. January 15, 1894.

Sawtelle, H. W., Surgeon. Detailed as Chairman of the Board for Physical Examination of Officers, Revenue-Marine Service. January 19, 1894.

Austen, H. W., Surgeon. To represent the service at the International Medical Congress, Rome, Italy. December 16, 1893.

Stoner, G. W., Surgeon. Granted leave of absence for seven days. December 22, 1893.

Irwin, Fairfax, Surgeon. To proceed to St. Petersburg, Russia, for duty. December 28, 1893. To proceed to Paris, France, for temporary duty. January 16, 1894.

Carter, H. W., Surgeon. To report at the Bureau for temporary duty. December 17, 1893.

Banks, C. E., Passed Assistant Surgeon. Detailed as Recorder of the Board for Physical Examination of Officers, Revenue-Marine Service. January 19, 1894.

Peckham, C. T., Passed Assistant Surgeon. Granted leave of absence for seven days. January 6, 1894. Granted leave of absence for six days. January 11, 1894.

Glennan, A. H., Passed Assistant Surgeon. Granted leave of absence for five days. December 20, 1893.

Brooks, S. D., Passed Assistant Surgeon. To proceed to Sandusky, Ohio, as Inspector. January 17, 1894.

White, J. H., Passed Assistant Surgeon. Granted leave of absence for thirteen days from December 18, 1893.

Carrington, P. M., Passed Assistant Surgeon. Granted leave of absence for thirteen days from December 18, 1893.

Williams, L. L., Passed Assistant Surgeon. Granted leave of absence for fourteen days. January 17, 1894.

Bratton, W. D., Passed Assistant Surgeon. To proceed to Wilmington, N. C., for duty. January 9, 1894.

Woodward, R. M., Passed Assistant Surgeon. Granted leave of absence for ten days. December 18, 1893. Granted leave of absence for fourteen days. January 17, 1894.

Stoner, J. B., Passed Assistant Surgeon. To proceed to Marshfield, Oregon, as Inspector.

Guitéras, G. M., Passed Assistant Surgeon. To proceed to New Orleans, La., for duty.

Perry, J. C., Passed Assistant Surgeon. To proceed to Norfolk, Va., for temporary duty.

Young, G. B., Assistant Surgeon. Granted leave of absence for three days. January 1, 1894.

Brown, B. W., Assistant Surgeon. Granted leave of absence for thirty days. December 16, 1893.

Rosenau, M. J., Assistant Surgeon. To proceed to Evansville, Ind., for temporary duty. January 13, 1894.

Gardner, C. H., Assistant Surgeon. To proceed to San Francisco Quarantine for temporary duty. December 22, 1893.

Nydegger, J. A., Assistant Surgeon. Granted leave of absence for twenty-three days. December 20, 1893.

Oakley, J. H., Assistant Surgeon. Granted leave of absence for twenty-five days. December 20, 1893.

Norman, Seaton, Assistant Surgeon. Granted leave of absence for thirty days. January 15, 1894.

Prochazka, Emil, Assistant Surgeon. To proceed to Louisvill, Ky., for duty. December 26, 1893.

Society Meetings for the Coming Week:

Monday, *February 5th:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society (private), New York; Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Corning, N. Y., Academy of Medicine; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society.

Tuesday, *February 6th:* Medical Society of the State of New York (first day—Albany); New York Obstetrical Society (private); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburgh, N. Y., Medical Association; Hampden, Mass., District Medical Society (Springfield); Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *February 7th:* Medical Society of the State of New York (second day); Society of the Alumni of Bellevue Hospital, New York; Harlem Medical Association of the City of New York; Medical Society of the County of Richmond (Stapleton), N. Y.; Medical Microscopical Society of Brooklyn; Bridgeport, Conn., Medical Association; Penobscot, Me., County Medical Society (Bangor).

Thursday, *February 8th:* Medical Society of the State of New York (third day); New York Laryngological Society; New York Academy of Medicine (Section in Pædiatrics); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *February 9th:* Yorkville Medical Association (private), New York; Medical Society of the Town of Saugerties, N. Y.; Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn.

Saturday, *February 10th:* Obstetrical Society of Boston (private).

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN GENERAL MEDICINE.

Meeting of January 16, 1894.

Dr. Charles E. Quimby in the Chair.

The Value of the Hæmatocrite in the Diagnosis of Anæmia.—Dr. Judson Daland, of Philadelphia, read a paper the object of which was to point out the advantages to be gained by the hæmatocrite for ascertaining or estimating the number of red corpuscles in a given volume of blood. Those who had had experience in counting blood-cells with the hæmocytometer could recall the many hours that had been spent in the enumeration of red and white blood-corpuscles, also the difficulties of correctly measuring, diluting, mixing, and placing in the slide the blood, and the making sure that the top cover was placed in the proper position. Few of the observers in this field but had had these same annoyances in determining the exact quantity of the diluted blood that should be placed upon the slide, and the frequency with which, even under the best of circumstances, their efforts had proved valueless, because of using either too much or too little of the diluted blood, or from the presence of foreign bodies, or from want of success in placing the top cover in position, was alluded to. Furthermore, when all these conditions had seemed to have been perfectly fulfilled, and it was believed that a perfect specimen had been secured, it was not uncommon to find, upon examining the blood, that the corpuscles were distributed unequally over the field, or, in spite of precautions, that a fine fiber from the material used in cleansing and drying the slide was present, thus making it necessary to repeat the whole process. Finally, if at last one secured a satisfactory specimen, the inaccuracies of the count were of such a character that it hardly repaid one for the hard work attendant upon the technique required in such examinations. It had been shown that no estimate was of value unless the cells in sixty-four small squares were counted, or unless, better still, two separate mounts were prepared and the cells counted in each. The eye strain, nervous excitement, and fatigue induced by three or four hours of the work were such as to make the most ardent clinical observer shrink from its too frequent repetition, particularly as the results had not been so accurate as had been hoped for. The sources of error in counting the blood-cells with the hæmocytometer were numerous. From a series of observations by the author and Dr. Carl Sadler, of Prague, they had been able to demonstrate the sources of error and also to show that they were in a great measure unavoidable. The two chief sources of difficulty seemed to be, first, inability to secure a full and thorough mixture of the blood, which was only one part of blood to ninety-nine parts of the diluting fluid, so that each drop of the mixture would contain the same number of blood-cells; secondly, to see that when the drop of diluted blood was placed upon the slide the layer of blood should represent exactly its share of the red blood corpuscles. These sources of error were most difficult to overcome. The first was in a measure obviated by prolonged shaking of the mixture, occupying three or four minutes, but the second must always remain a variable factor by the old method. In certain diseases it had been noted that the blood in the Zeiss counting pipette coagulated with unusual rapidity, and could not be thoroughly admixed. The foregoing had led the author to search for some other method of estimating the corpuscular richness of the blood. The original hæmatocrite had been found faulty in its mechanism, and also to possess a number of disadvantages. The author exhibited and described his perfected instrument. It was composed of a series of wheels so arranged that they multiplied the revolutions of an upright spindle. One revolution of the handle produced nine hundred revolutions of the frame which was placed on top of the spindle, the frame holding the tube containing the blood or fluid to be examined. After experimenting with nineteen different solutions, a two-and-a-half-per-cent. solution of potassium dichromate had been found to be the best fluid for diluting the blood. A measured quantity of blood was drawn into a tube, and an equal quantity of the solution added, and then the two were thoroughly mixed in a watch glass. The fluid was then to be introduced into a hæmatocrite tube, placed on the frame, and rotated eleven thousand times. The object was to employ a centrifugal force that would throw the corpuscles to the end of the tube. The tube was made of glass, and was graduated with a scale that could be read off and the number of red cells readily estimated.

The blood of fifty-five healthy male adults had been examined, and the volumetric percentage found to vary between 66 and 44, the average being 51·5. Eight female nurses had been examined, and the maximum volume found to be 42 and the minimum 36, giving an average of 44. Most of the nurses were anæmic, and it was probable that the true physiological volume was somewhat higher than the investigation had proved. The blood cells in twenty-five healthy males had been counted and compared with the volumetric percentage, and it had been found that each percentage volume represented 99,390 red corpuscles, and, as the difference was of absolutely no consequence, it became evident that each volumetric percentage was the equivalent of 100,000 red blood-corpuscles; therefore, to convert the volumetric percentage into the number of red blood-cells present, all that was necessary was to add five ciphers. In these physiological experiments it had been observed that the white corpuscles occupied a space represented by one of the lines that constituted the scale on the tube of the hæmatocrite. When such a condition as leucocytosis was present it could readily be determined, provided the number of white corpuscles exceeded 30,000 to the cubic millimetre. A prolonged series of observations had been made in the same cases to demonstrate any variability that might occur in the use of the hæmatocrite, with the result that a difference of from one to four per cent. might be expected. The author wanted it to be understood that his work was yet in the experimental stage, and that he had been rapidly working up to a point of success. It was only about a week previously that he had been able to make a step in advance by drawing the blood directly from the finger into the hæmatocrite tube and rotating it at once. By this means the greatest sources of error were obviated, those of air-bubbles getting into the tube, evaporation of the fluid, gravitation of the corpuscles, and coagulation.

Dr. W. G. Thompson said that he had had no experience with the hæmatocrite, but he was satisfied that it had its advantages. It had seemed to him that there might arise a source of error in the ultimate results from the rapid rotation; he was not sure that it might not cause a destruction of the red cells. He would like to hear from the author of the paper on this point. The speaker's success in estimating the condition of the blood had been sufficiently satisfactory with the microscope for him not to be inclined to give up this method. Of course, he realized the sources of error that might be present, but for practical purposes he thought the results with the hæmocytometer were approximately correct.

Dr. Smith exhibited an ingenious instrument for determining the amount of hæmoglobin in a given case. The working of the apparatus was exceedingly simple. Its utility was commended in cases where repeated examination of the blood was required at the bedside to watch the progress of the disease.

Dr. Daland said that in regard to the number of revolutions 10,000 were sufficient to fix the volume, and this was to be regarded as a standard. In answer to Dr. Thompson's question, he said that in the dichromate solution the rotatory movement had no effect whatever upon the red cells; they were in no way injured. The red cells were thrown to the peripheral end of the tube, and the white cells did not mingle with the red, but occupied what was represented as one line on the hæmatocrite tube. In the disease of microcytosis this condition was changed; the white cells were found to form into the red. In leucæmia the white cells formed a larger mass in the tube, the relation being, first, a layer of white cells, then one of red, then a yellowish layer, which was supposed to consist of broken-down large white corpuscles.

Book Notices.

Supplement to the Reference Handbook of the Medical Sciences. By Various Writers. Illustrated by Chromolithographs and Fine Wood Engravings. Edited by Albert H. Buck, M.D., New York City. Vol. IX. New York: William Wood & Co., 1893. Pp. vii–1076.

This supplementary volume is intended "to bring the *Reference Handbook of the Medical Sciences* fully up to date," as the preface states. It seems to us that the intention has been carried out as far as the rapid progress of medical science makes it possible to bring any such large work up to date, and the volume under consideration not only attains this end, but also greatly increases the value of the entire *Handbook*.

It is impossible to review in detail a book of more than a thousand pages, covering such an immense field as this one does. We are obliged to confine ourselves to a brief description of the general plan and scope. The arrangement, as in the earlier volumes, is alphabetical. There would be grave objections to this way of grouping the various articles were it not for the fact that a very complete index makes it easy to find all that is said upon any topic, no matter what may be the title of the article or articles in which it is mentioned. This index gives both the subjects and the names of the writers who have contributed articles.

The book is not intended to give exhaustive essays upon everything connected with the science of medicine; it is meant to be a useful compendium for the practical working men of the profession. A large part of it is devoted to therapeutics, dealing specially with the newer remedies, and the facts about the latter are presented in a clear and satisfactory way. The details of technique in modern aseptic surgical procedure are also well presented. The article upon Bacteriological Technology is worthy of particular praise, as is also that upon Histological Formulæ. The article upon Diphtheria is very good, and gives due weight to the importance, diagnostically considered, of the Loefler bacillus. Much valuable information is given about hygienic matters and disinfection. Among the articles of a more theoretical kind, those on Heredity and allied topics deserve mention. In view of the interest now taken in the thyreoid, the papers on its anatomy, pathology, etc., will prove interesting as well as important.

Of course, there is much difference in the worth of the various articles—it could not be otherwise, since the writers number upward of a hundred and twenty. It is but just to say that, on the whole, the standard is high and the entire work is a credit to its publishers, its contributors, and, above all, its editor.

The presswork is good. Most of the illustrations are very well done, and a sufficient number of them are inserted to make clear matters which without them would be obscure.

Die Kolonisirung der Geisteskranken in Verbindung mit den Offen-Thür-System, ihre historische Entwickelung und die Art ihrer Ausführung auf Rittergut Alt-Scherbitz. Von Dr. Albrecht Paetz, Sanitätsrath, Direktor der Provinzial Irren-Anstalt Rittergut Alt-Scherbitz, etc. Berlin: Julius Springer, 1893. Pp. x–242.

As is indicated by the title of this book, the colony system and open-door system of caring for the insane are here advocated by the author, who is the medical superintendent of *the* model colony for the insane of the world—viz., Alt-Scherbitz, near Leipsic. This colony has become especially well known through Mr. Letchworth's book, *The Insane in Foreign Countries*, and also through the descriptions of several American physicians who have visited it. In the work of Dr. Paetz we have, first, a chapter upon the development of insane asylums from prehistorical times to the present day, and our numerous latter-day methods of construction and arrangement are described, such as special curative institutions, mixed asylums, the pavilion system, and so on. Then follow chapters upon the agricultural colonization schemes carried out in France, Germany, and Bohemia, with the advantages and disadvantages clearly set forth. The rest of the book is given up to the description of the plan followed at Alt-Scherbitz, which is not fully colonial, but a combination of the asylum and colonization systems. Alt-Scherbitz, to a visitor, looks like a small suburban village, and has nothing to suggest an institution about it, much less an insane asylum. The volume is richly illustrated with map, plans, and photo-lithographs. No asylum in this country can afford to be without it, for a standard of excellence in the care of the insane such as is set forth in this book should be ever before the eyes of both asylum superintendents and asylum managers, in order that some day we may make an approach to a reasonable and humane method of caring for the insane.

Text-book of Normal Histology: including an Account of the Development of the Tissues and of the Organs. By George A. Piersol, M. D., Professor of Anatomy in the University of Pennsylvania. With Four Hundred and Nine Illustrations, of which Three Hundred and Fifty-eight are from Original Drawings by the Author. Philadelphia: J. B. Lippincott Company, 1893. Pp. xviii–11 to 439. [Price, $3.50.]

The author's practical experience as a teacher has been of great use to him in indicating what a text-book of histology should teach and what it should omit. He states that he has endeavored to steer between the Scylla of too great conciseness of statement and the Charybdis of too great elaboration of detail, and his successful efforts in this direction have resulted in the production of what is one of the best text books on this subject that we have.

The salient feature of the volume is the constant aim to impress upon the mind of the reader the necessity of recognizing the underlying morphological relations of the tissues. The wider bearing of this relationship becomes apparent in the account of the histological differentiation concerned in the development of the tissues and the organs. The general work of the volume is excellently done.

The author has been at great pains to provide suitable illustrations, having made many of the drawings himself with the aid of the camera lucida or the photomicroscope. In these cuts the natural appearance of the preparations is well preserved.

The volume is entitled to, and undoubtedly will receive, a cordial welcome from the profession.

A Text-book of Physiology. By M. Foster, M. A., M. D., LL. D., F. R. S., Professor of Physiology in the University of Cambridge and Fellow of Trinity College, Cambridge. Fifth American, from the Fifth English Edition; thoroughly revised, with Notes, Additions, and Three Hundred and Sixteen Illustrations. Philadelphia: Lea Brothers & Co., 1893. [Price, $4.50.]

This new American edition of this well-known text book contains all the additions and corrections of the fifth English edition, the separate parts of which were reviewed in these columns as they appeared from time to time. The present volume is printed and illustrated in the excellent manner that characterized its predecessors, and that the entire work is contained in one volume makes it much more convenient for students.

Surgery. A Manual for Students and Practitioners. By Bern B. Gallaudet, M. D., and Charles N. Dixon Jones, B. S., M. D. Philadelphia: Lea Brothers & Co. [Price, $1.75.] [*The Students' Quiz Series.*]

There are many works on surgery of far greater pretensions than this little volume that are likely to be less useful. The authors have been very successful in keeping their material within a most reasonable limit, and in doing so they have not sacrificed lucidity. The work is illustrated with well-selected cuts, and we believe it will be popular with students.

The Principles and Practice of Surgery. By John Ashhurst, Jr., M. D., Barton Professor of Surgery and Professor of Clinical Surgery in the University of Pennsylvania, etc. Sixth Edition, enlarged and thoroughly revised. With a Colored Plate and Six Hundred and Fifty-six Illustrations in the Text. Philadelphia: Lea Brothers & Co., 1893. Pp. xxviii–33 to 1166. [Price, $6.]

The sixth edition of this standard work has been so thoroughly and efficiently revised that it is almost a new work.

One of the first additions to the volume is the chapter on surgical bacteriology, by Dr. C. B. Nancrede, who has presented this subject in a clear, logical, and concise fashion. In the plate illustrating some micro-organisms it might have been well to specify the amplification of each organism.

In the treatment of cicatrices following burns no mention is made of the use of Thiersch's skin-grafting method, that is more likely to be available than twisting or sliding flaps of sound skin. In fact, insufficient prominence is given to the extensive field of usefulness of this method of grafting.

The author still holds his conservative position regarding the advantages of cerebral localization and the cases in which recourse to cerebral surgery is justifiable.

So, also, he says regarding the surgery of the spine: "Considering, therefore, the not infrequent favorable issue of these cases (fracture of the spine) under expectant treatment, nearly twenty nine per cent. having received benefit, and only sixty-nine per cent. dying of all cases taken together, we are surely justified in declaring that trephining of the spine, if ever resorted to, should be reserved for very exceptional cases."

Dr. Hirst has revised the chapter on gynæcology, Dr. de Schweinitz that on diseases of the eye, and Dr. Randall that on diseases of the ear.

The revision has added some twenty pages to the book as well as a number of new illustrations.

The volume sustains its position as a safe and conservative guide for the student and the practitioner.

The Narrative of a Busy Life. An Autobiography. By Arthur Hill Hassall, M. D. Lond., Member of the Royal College of Physicians of London, etc. London: Longmans, Green, & Co., 1893. Pp. iii–82.

One can not but say, on reading this volume, that it is indeed the narrative of a busy life. The grandson and son of a physician, Dr. Hassall was born in 1817. His early education was limited on account of lack of funds, and this same necessity seriously hampered his course while a medical student. During that portion of his career he paid great attention to the study of natural history, and the habits of observation thus acquired undoubtedly stimulated his future lines of investigation.

In 1839 he became a member of the Royal College of Surgeons and in 1841 of the Apothecaries' Company.

In the first portion of his professional career he assisted a brother, who was also a physician, and found time during his professional pursuits to make an investigation of the fresh-water *Algæ* and of *Fungi.*

Dr. Hassall afterward left his brother and began practice in a suburb of London. While thus engaged he published several memoirs on sanitary topics, and conducted in behalf of the *Lancet* an investigation on the adulteration of food.

In 1852 his well-known work on *The Microscopic Anatomy of the Human Body* was published. The author's subsequent career was full of work until, in 1866, a serious pulmonary hæmorrhage required the cessation of work and a change of his residence to Ventnor. While he was there his activity manifested itself by planning and creating the National Hospital for Consumption.

Subsequently Dr. Hassall went to San Remo, where he has since resided. He tells the story of his life in a pleasant fashion, and it contains many suggestions that may be useful to those about to enter on their professional career.

Modern Gynæcology. A Treatise on Diseases of Women, comprising the Results of the Latest Investigations and Treatment of this Branch of Medical Science. By CHARLES H. BUSHONG, M. D., Assistant Gynæcologist to the Demilt Dispensary, etc. Illustrated. New York: E. B. Treat, 1893. [Price, $2.75.]

THE author considers that the majority of the text-books on diseases of women are written from the standpoint of the specialist, and are likely to be too voluminous for the use of the general practitioner, who should be competent to give advice regarding gynæcological subjects. Accordingly, it is the effort of this book to place before the physician a clear, commonsense statement of the symptoms of the various diseases of the female sexual organs and to indicate in detail the methods of treatment that can be applied by him, and also the methods requiring the aid of a specially trained consultant of larger experience. The author's style is clear and he has described the various features of routine gynæcological work in a practical manner.

Healthy Hospitals. Observations on Some Points connected with Hospital Construction. By Sir DOUGLAS GALTON, late Royal Engineers, K. C. B., Hon. D. C. L., LL. D., F. R. S., etc. With Illustrations. London: H. K. Lewis, 1893. Pp. xi–287.

THE author states that the principles enumerated in this book are not new, but they lie scattered through various publications, and it has been his object to bring them together and, by showing what points are essential to health in hospital construction, to enable those upon whom the regulation of the construction devolves to concentrate expenditure upon these matters alone. He hopes to prevent the erection of large, palatial hospitals in towns or other localities that are unsuited to them, for simplicity of design and of detail that aims to provide abundance of light, air, and easily cleansed surfaces is more important than skill in architectural design.

The various chapters define what a hospital is, where it is best situated, the conditions that vitiate the air in an occupied room, and the quantity of air necessary to mitigate these conditions, the purification of air, the movement of air, the methods of warming and lighting, the ward unit and its essential features, and the construction and arrangement of special hospitals.

Each year witnesses the construction of new hospitals throughout the country, and medical as well as lay members of hospital boards will find this volume useful and suggestive.

Myxœdema: and the Effects of Climate on the Disease. By A. MARIUS WILSON, M. D., B. S. Durh., L. R. C. P. Lond., M. R. C. S. Eng. London: The Scientific Press, Limited, 1894. Pp. 9 to 36. [Price, 2 shillings.]

IN this brochure the author reviews the history of myxœdema, its ætiology, symptoms, pathology, diagnosis, prognosis, and treatment. He considers that the disease may occur in any climate. The book is a fair, but not comprehensive, *résumé* of our knowledge of this interesting condition.

Manual of Physical Diagnosis. For the Use of Students and Physicians. By JAMES TYSON, M. D., Professor of Clinical Medicine in the University of Pennsylvania, etc. Second Edition, revised and enlarged. Philadelphia: P. Blakiston, Son, & Co., 1893. Pp. xi–9 to 241. [Price, $1.50.]

IT would seem that a work with such a title limited to palpation, percussion, and auscultation of the thorax and abdomen was somewhat circumscribed in scope. We should expect some reference to the general methods of examination of the eyes, ears, nose, mouth, and throat. So far as the examination of the lungs and heart is concerned, the work is quite satisfactory, but it is far from being a manual of physical diagnosis.

Outline of Physical Diagnosis of the Thorax. By ARTHUR M. CORWIN, A. M., M. D., Demonstrator of Physical Diagnosis in Rush Medical College, etc. Chicago: The W. T. Keener Company, 1893. Pp. viii–9 to 111.

THIS little volume presents in a concise tabulated form the essential features of the physical diagnosis of the thorax. It will undoubtedly prove to be very useful to the student in the clinical study of thoracic auscultation and percussion.

A Handbook of Ophthalmic Science and Practice. By HENRY E. JULER, F. R. C. S., Ophthalmic Surgeon to St. Mary's Hospital; Surgeon to the Royal Westminster Ophthalmic Hospital, etc. With Illustrations. Second Edition. Philadelphia: Lea Brothers & Co., 1893. Pp. xvi–549.

THE first edition of this work won a high place in the regard of students of ophthalmology, because of its having the points they wished to look up stated concisely yet clearly and with sufficient fullness. In this second edition considerable alterations have been made in both the text and the illustrations, and the credit won by the first has been well maintained. The chapters on refraction show evidence of great care in their preparation, but the description of the Javal-Schiotz ophthalmometer shows how difficult it is to keep a text-book abreast of the times. The improved form of this instrument, which has for the last few years proved so valuable an adjunct to our armamentarium, is not mentioned, and the original pattern is described rather as a curiosity than anything else. But such faults are of omission and are to be excused, because the author of such a work has to grapple with the very serious question of what to omit in order to make it of a reasonable size.

Typographically, the book is excellent. It is printed on good paper and the cuts are clear and distinct.

Baden-Baden und seine Thermen. Von Dr. med. W. HENRY GILBERT, Hausarzt des Sanitoriums und Kurarzt in Baden-Baden. Wien und Leipzig: Wilhelm Braumüller, 1893. [Braumüller's Bade-Bibliotheke. Pp. viii–169.] [Preis, M. 2 50.]

THIS handbook of Baden-Baden gives a satisfactory review of the history, topography, and various features of this resort, as well as a comprehensive description of the springs, their physiological action in disease, and the various diseases for which their waters are recommended. The author's familiarity with these springs makes the work authoritative.

Mental Nursing, or Lectures for Asylum Attendants. By William Harding, M. B. (Ed.), M. R. C. P. (Lond.), Assistant Medical Officer, Female Department, Berrywood, Northampton, etc. London: The Scientific Press, Limited, 1893. Pp. vii–131. [Price, 2*s.* 6*d.*]

We should object to the title of this book, for mental nursing might be applied as well to a kindergarten as to an insane asylum, and possibly even more appropriately. As indicated by the subtitle, it consists of lectures for asylum attendants. There have been several similar primers issued, and this takes its place among the best of them, although possibly the nurses in American hospitals for the insane could study Dr. Granger's little book with more advantage.

La pratique des maladies du système nerveux dans les hôpitaux de Paris. Aide-mémoire et formulaire de thérapeutique appliquée. Par le Professeur Paul Lefert. Paris: J. B. Baillière et fils. Pp. 8–9 to 285. [Prix, 3 fr.]

A useful little pocket handbook giving the therapeutic measures resorted to in Paris hospitals in the treatment of nervous diseases. The diseases are arranged alphabetically, and under each heading various professors—Charcot, Babinski, Huchard, Potain, Lancereaux, Laveran, Falret, Peter, Marie, and others—briefly describe their remedies and procedures. As French methods of treatment differ very much in important particulars from our own, the book is interesting and profitable reading.

BOOKS, ETC., RECEIVED.

A Clinical Text-book of Medical Diagnosis for Physicians and Students, based on the most Recent Methods of Examination. By Oswald Vierordt, M. D., Professor of Medicine at the University of Heidelberg, etc. Authorized Translation, with Additions. By Francis H. Stuart, A. M., M. D., Member of the Medical Society of the County of Kings, New York, etc. Third Revised Edition. With One Hundred and Seventy eight Illustrations, many of which are in Colors. Philadelphia: W. B. Saunders, 1894. Pp. xv–700. [Price, $4.]

Lectures on the Surgical Disorders of the Urinary Organs. By Reginald Harrison, F. R. C. S. Fourth Edition, rewritten. London: J. & A. Churchill, 1893. Pp. xvi–588.

The Use of Antiseptics in Midwifery; their Value and Practical Application. By Robert Boxall, M. D. Cantab., M. R. C. P. Lond., Assistant Obstetric Physician to and Lecturer on Practical Midwifery at the Middlesex Hospital, etc. London: H. K. Lewis, 1894. Pp. 35. [Price, 1*s.*]

Transactions of the American Association of Obstetricians and Gynæcologists. Vol. VI. For the Year 1893. Philadelphia: William J. Dornan, 1894. Pp. viii–4 to 308.

The Necessity for Special Institutions for the Consumptive Poor. The First Step toward the Complete Eradication of Tuberculosis. By H. Longstreet Taylor, A. M., M. D., St. Paul. [Reprinted from the *Northwestern Lancet.*]

The Modern Eye; with an Analysis of Thirteen Hundred Errors of Refraction. By W. F. Southard, A. M., M. D. [Reprinted from the *Pacific Medical Journal.*]

The Treatment of Diphtheria. By F. E. Waxham, M. D., Denver. [Reprinted from the *Journal of the American Medical Association.*]

New York State Reformatory. Report of the Board of Managers to the Legislature. For the Year ending September 30, 1893.

Miscellany.

Nostrum Advertisements and the Journal of the American Medical Association.—The following letter from Dr. Solomon Solis-Cohen, of Philadelphia, was published, "by order of the trustees," in the *Journal of the American Medical Association* for January 20th:

About a month ago I addressed you a letter replying to one of your editorial articles. As that letter has not yet been printed, and as I have not heard further in reply to my query concerning it than that search would be made, I presume it has been lost, and I therefore beg to again communicate its substance, in the hope that it will receive an early insertion, together with this preface explanatory of its apparent tardiness. I wrote at first and again write because I desire to see the *Journal* a perfect representative of the best in American medicine.

In your editorial you animadverted on the fact that some of your Eastern contemporaries "lectured" the *Journal* on the sale of its advertising columns to nostrums, and you replied that (1) there was an attempt to make a difference between a "physicians' journal" and a "publishers' journal," which you thought unfair, and (2) that no one had ventured to explicitly name the objectionable advertisements.

At this lapse of time I have had to repeat your argument as above in order to make my answer intelligible.

While I have no concern in the question between you and your contemporaries as to which is "pot" and which "kettle," and whether or not the etiquette that should prevail among culinary utensils has been violated by cries of "Blacky" from a soot-covered vessel, I have very much concern with the main issue, and on it I beg to respectfully differ with you in both your contentions.

1. Is a "physicians' journal" bound by more stringent rules than a "publishers' journal?"

Let me answer this by an apt illustration: At the time I brought to the attention of the Philadelphia County Medical Society the question of nostrum advertising in medical journals I had some correspondence on the subject with a friend, an honorable gentleman, a member of a well-known publishing house. His answer to my request that his house should decline nostrum advertising was about as follows: "So long as the journal of which you are part owner sets the example of receiving such advertisements you have no grounds on which to criticise us. When the *Journal of the American Medical Association* declines to advertise secret preparations we will likewise take the matter into consideration."

So you see there is a very important difference between a "physicians' journal" and a "publishers' journal." I am "part owner," to quote my friend, and every other member of the American Medical Association is likewise "part owner" of a journal which persists in a course of conduct that we believe to be wrong and that we seek to prevent in others. Our reform must "begin at home."

But even if this argument were not so forcible, there is one that you have persistently ignored. The Code of Ethics, which is not yet repealed, and which will not, I trust, be repealed, prohibits not only the use of nostrums by physicians, but *any action that tends to increase their use.* Surely advertising them "tends to increase their use!" Were it otherwise, the "enterprising proprietors" would not waste their money on advertisements.

Furthermore, even if you ignore this special provision of the Code, there is the resolution adopted at the instance of the Medical Society of the State of Pennsylvania at the Detroit meeting of the American Medical Association which expressly forbids the trustees of the *Journal* from advertising secret preparations.

The ingenious evasion by which the trustees have sought to nullify this resolution, and which they must be aware is only laughed at by intelligent men, does more credit to their acuteness than to their straightforwardness. Nor does the fact that their action was passed over in silence at the Milwaukee meeting render it any the less blameworthy. The fact apparently is that the trustees have deliberately decided to disobey not only the spirit but the letter of the Code and of the Detroit resolution. They do not even "keep the word of promise to the ear, to break it to the hope," but break it to ear and hope alike. On the surface, their action seems to highly deserve a vote of censure; I will be very glad to learn that there is some justification for it not apparent. If it be said that without the money received for this prostitution the *Journal* could not exist, it would be very difficult to answer such a plea in respectful terms. I have no doubt that you can elicit a similar plea from nearly every strumpet. We can pity the strumpet, but surely the *Journal* does not wish to be an object of pity!

2. Has no one explicitly pointed out the objectionable advertisements?

A number of them were mentioned in my paper before the Philadelphia County Medical Society, Shall Physicians become Sales Agents for Patent Medicines? which was reprinted in the *Journal* and editorially commented upon. The *Pittsburgh Medical Review* has frequently named them. In my letter mislaid by you I ventured to give you another list. In this communication I will content myself with naming only one—the one which is very properly headed An Affront to the Medical Profession. But you need no other rule than that of the Code —which makes *secrecy* the sign and test of a nostrum.

The Intravenous Injection of Saline Fluid.—In a minor editorial article the *Lancet* for January 13th says:

There can be little doubt that the injection of salt solution into the veins constitutes a valuable addition to our therapeutic measures in certain otherwise hopeless cases. We refer more especially to cases of severe accidental or unavoidable hæmorrhage, to severe cases of post-partum hæmorrhage, as well as to cases of extra uterine pregnancy where there has been rupture of the sac with profuse intraperitoneal hæmorrhage. It would seem that the injection is also indicated in some cases of severe operation where a large quantity of blood has been lost, but less than is needed to prove immediately fatal. In a certain proportion of such cases, although the patient is not pulseless at the end of the operation, death occurs before many hours have elapsed, apparently from secondary syncope. In some cases of the kind, at all events, it appears probable that the injection of salt solution may avert an unfavorable termination. It is certainly a great step in advance to have it established that the injection of actual blood is unnecessary; for so long as blood was thought to be required the practical difficulties surrounding the procedure were so great that it has but rarely been employed; and it is, in the light of our present knowledge, as certain as anything can well be that many lives have been lost solely for the want of some ready means of restoring the volume of the circulating fluid. It is evidently of great importance that the method should be a simple one, and especially that it should not involve the possession of some more or less complex apparatus which the ordinary practitioner could not be expected to have at hand. As regards the fluid to be used, the simplest of all—plain water—will do, since successful cases are reported in which water only has been injected; but it is certainly preferable to use a solution of common salt, the proper strength being a teaspoonful of the latter to a pint of water. Here again, while it is no doubt desirable, if circumstances permit, that the solution should be sterilized, it is abundantly clear that it is by no means absolutely essential. A patient should not be allowed to die from loss of blood, where it is practically certain if let alone she would do so, merely on account of an extremely remote risk of septic poisoning from the water in the kitchen kettle and the salt in the table salt cellar. Then as to the quantity of fluid to be injected. This should depend upon the amount of blood that has been lost, but this often can not be accurately estimated. It is important to note, however, that a few ounces are of little or no use. In cases really requiring this treatment it is a question of injecting pints. From a minimum of two pints in the less severe cases to a maximum of six pints in the worst cases is the amount of salt solution to be used. This should be continued till the pulse can be felt at the wrist. Opinions differ as to the rate at which the fluid should be injected; some consider that a pint in four minutes is not too fast, while others think that the rate of injection should be a third of this, or less. Probably the actual state of depletion of the circulation causes the rate at which the injection may be safely made to vary in different cases. The temperature of the fluid used should be about the same as that of the body. The actual apparatus required consists only of a cannula and a few feet of India rubber tubing connected with a vessel to hold the salt solution. The form of the vessel is immaterial; indeed, the tubing, converted into a siphon, may be made to convey the fluid from an ordinary jug. Now that the whole procedure has been so much simplified, we may expect to hear of it being more frequently resorted to in the coming year. Certainly no patient should be allowed to die from hæmorrhage without an attempt being made to save her by means of the intravenous injection of salt solution.

An Ovarian Mamma.—In an abstract of an article in the *Medical Press and Circular* the *Quarterly Medical Journal for Yorkshire and Adjoining Counties* says that Mr. Bland Sutton, in the course of an abdominal section upon a woman, aged twenty-six, who had been admitted into the Middlesex Hospital suffering from what was supposed to be peritonitis, opened into a cyst which proved to be dermoid in its nature, and on the wall of which, when the contents of the cavity had been cleared out, he discovered a well-formed ovarian mamma, presenting the usual characteristics of that gland in the virgin. It was somewhat larger than a tangerine orange, had a well-formed nipple, but no areola, and was composed of fat in the center of which was a cluster of glandular material the ducts of which traversed the nipple. In the course of his remarks made at the time Mr. Sutton pointed out that this special form of abnormity was, comparatively speaking, rare, as in his own experience he had only met with three examples of it. Nipple-like and mammary projections in which no glandular structure is present are of frequent occurrence. The patient made an excellent recovery.

Modern Medical Journalism was the title of a presidential address delivered by Mr. J. Greig Smith, professor of surgery in University College, Bristol, England, before the Bristol Medico-chirurgical Society on October 11th, and published in the December number of the *Bristol Medico-chirurgical Journal.* In the course of his address Mr. Smith said:

Modern journalism has certain characteristics which are peculiar to our age and time. This is the age of the reporter, not of the scholar. The material of literature is news, not thought; gossip, not work. The chatter of the newsmonger pushes aside the matured thought of the man of letters. We are deluged with a shallow flood of literature, and we are so occupied in paddling about in its smooth and tepid pools that we scarcely care to try our strength in the rougher and colder waters of deep thinking.

This is also the age of advertisement. The desire of the writer is rather to be widely read than to write well. The unavowed aim of the writer is the avowed aim of the journal—a wide circulation; and the purpose of this wideness of circulation is not that knowledge may be diffused, but that advertisements may be caught—and money. Unknown men write to advertise themselves; known men are induced to write to advertise the journal. The chief end of journalism is to catch advertisements; the trail of the advertiser is over all.

Now, the population of these islands being, on good authority, mostly fools, the editor who hopes to secure the largest number of readers—the widest circulation—must cater accordingly. And so the successful editor does. The writing is not up to the highest intelligence, but down to the meanest capacity. The leveling is down—down to the dead level of the school board. Free education, wide circulation, and cheapness—cheapness in every sense—go well together. They are the Fates—I had almost said the Furies—of modern journalism.

And now the advertiser is turning on us. He is already the mainstay of the press; naturally he seeks to become the arbiter of letters. It is openly stated that he now dictates to the editor what authors shall write for his paper. If a story by a certain popular author is not in the magazine, so increasing its circulation, the advertiser will withdraw his advertisement. It is whispered even that the review of a book or a report on manufactures may vary directly as the square of the inches occupied in advertising them. This is a sad fact for literature; but it is a fact, and we must face it. I confess that I should like to fight it.

Now, is there anything of this sort in modern medical journalism? I should like to put to the modern medical editor one test question, and let his answer decide. I should ask: "Which would you consider the better copy for your journal—the clever gossip of a keen reporter hanging around the deathbed of an emperor, or the most scientific paper ever written on cancer of the larynx?" I know what his answer would be, and so do you.

There are sundry difficulties which meet the best-intentioned editor which he can not remove, and which he must accept. One of these, I grieve to say, relates to the deficient literary education of the average medical man. For some mysterious reason the art and science of logic is not expected to be known by medical men. It is not known, and their writings show it. The arts of rhetoric and composition also are ignored; even the humdrum rules of grammar are in abeyance. How much of the editor's function is the humble one of correcting a school exercise in grammar and composition the editor only knows. It is certainly much more than it ought to be, and much more than it need be, if those who guard the portals of medical education were to give some heed to the outcry of those who practice their profession and teach it.

This, then, to begin with. We must accept the fact that, with a few, a very few, and sometimes brilliant exceptions, the literature of medicine at the present day is, as pure literature, either indifferent or positively bad. Scarcely a single issue of a journal is without a paper from which a man educated in ordinary literary methods could not extract abundant examples of errors in logic, in rhetoric, in composition, and even in humble grammar.

Another fact which the editor must accept is the widespread ignorance of the history of medicine—recent and remote—which his contributors display. Such ignorance, betraying itself on every hand, lends color to the views of certain cynics who hold that it is only by courtesy that our profession is called "learned"; that we are educated by rote, and not by thought; that the evolution of ideas has no interest for us; and that our classics being dead, may as well be buried. There is ignorance not only of classics, but even of class-books. It would truly seem as if knowledge in our profession began to decay after five years, and was buried and forgotten after ten. However this may be, it is certain that too many writers show a culpable ignorance of, or neglect of, the works of others in the fields they seek to cultivate.

From this condemnation I desire to exclude the literature of our American brethren. The country which has given to us the *Index Medicus* and the *Index Catalogue* of its splendid library is not likely to fail in knowledge of the history of medicine. A knowledge of the work of others that is nearly always honest and thorough is as common in the best American medical literature as it is rare in our English journals. The man who writes on his own experience and knowledge writes on a poor and narrow and shifty foundation. In science he is to be found only in medicine; and in scientific medicine he bears the prefix—in all its significations—British.

It used to be true that the weight of the printed word was greater than of the spoken. We have changed all that. News is news none the less that it is either folly or lies: perhaps it circulates all the better. In past times also the printing of a book cost much money. Necessity, then, if nothing else, made a man think much before printing his thoughts. The value that a man put on the products of his brains was testified to by the finish of the garb in which he clothed them. It would be easy to put before you a score of books printed from a half to a whole century ago, and say of each of them that, in respect of printing, paper, binding, and more especially of illustrations, we never see their like now. The artistic finish then sought after is now replaced by the blurred mimicries of the "process block." And if we do borrow, as we frequently do, from the illustrations made by our predecessors, we treat them as time does their tombstones, by defacing their surfaces and roughening their lines; but not as time does, by making them venerable. What would a Cooper, or a Bell, or a Miller, or a Liston, or a Fergusson be not justified in saying of the successive generations of bookmakers who have borrowed their engravings and reproduced and defaced them?

And all that can be said in favor of our modern methods of illustration is that they are cheap. Certainly they are cheap.

And our journals! Look at those piles on our tables! Of the thousands and thousands of papers in them how many are worth preserving? how many are worth reading? how many are worth only cursing? The dew of knowledge! Medical knowledge is not a dew, but a deluge. It drowns rather than nourishes.

The man who earnestly and honestly seeks to keep abreast of real knowledge has to educate himself in a course of training in values whereby he finds out and knows the fool, and the drudge, and the bore, and the advertiser, and learns to avoid them. When he has done this, he finds that his labors are not so hard after all. It is, then, a mere turning over of thousands of leaves and a close reading of tens of pages. But it takes a long time, and greatly tries one's patience, to learn whom to avoid in medical literature.

And here our editors might help us. They might select for us. They might silence the chatterer and make the worker talk. You can scarcely put too cruel a gag on the garrulous. They are doubly mischievous, for not only do they waste the reading energies of their brethren, but they oust the work of men worth reading. It may be that the man who bustles about in the van of progress, seeming to do much but really doing nothing, like the Handy Andy of the circus, pleases the audience; and that may be why the editor supports him. But let us be careful lest the genuine actor in his dignity and pride, not caring to play to the gallery, and not asked to play to the stalls, wait outside altogether, or even retire to his tent and sulk.

The best men and the best workers are silent and retiring; the editor must seek them out, and drag them out, and make them speak. This is no easy matter, as I can from experience testify. It is very hard to get our best men to write. One of my failures I specially deplore, for the man whom I tried to persuade is now, to the great loss of the West of England, no more with us. I refer to the late William Liddon, of Taunton. His last promise to write for our *Journal* was given me between three and five one beautiful morning when we were driving over the Quantocks. I scarcely knew which most to admire: his vivid appreciation and description of a lovely sunrise then going on, or his exquisitely clear, almost photographic, language in describing our case and others in his experience that bore on it. He promised to write for our *Journal;* he might have done it; he can not now. It is a loss to our art that the work of such men as Liddon lives only in the memories of friends and patients. It would be a gain if our editors were to insist on its being kept alive.

An equally great blessing would be to find some editors who, in respect of certain well-recognized classes of papers, would insist on their entombment.

There is the paper of the pushing clinician. We are warned of its appearance by a leaderette, which informs us that "at 1.30 on the afternoon of Tuesday, at the South London Hospital, Mr. Hepaticus Brown removed both suprarenals for Addison's disease. We are promised full particulars for a future number." The anxiously-awaited particulars appear a month later as a paper On Removal of the Suprarenals for Addison's Disease: a successful case, with a complete list of all other operations. Hereafter Mr. Hepaticus Brown poses as the leading authority on diseases of the suprarenals. This path to high repute is much affected: it is easy and broad, if it is not very straight.

Then there is the pushing scientist. We, his teachers and examiners, probably knew him as a gentle, plodding young man with a great capacity for note-taking. Now, with the help of a scholarship, asked for and granted, he has started hotly in pursuit of something called Research (spelled with a capital letter). He tells us *everything* he sees in the new path, and he sees much that is wonderful. If such men could be made to hold their tongues until they had spent some years as hewers of wood and drawers of water in the workshops of our masters in research, the world might be richer; it certainly would be none the poorer.

Then, once more, there is the pushing practitioner. His pride is puffed up and his reputation is increased by a systematic publication of all his wonderful cases. As we know, wonderful cases are found in greatest numbers by the youngest men in the smallest practices. Our pushing practitioner has not long left the schools; and he believes that science and art have stood still there since he left them. An editor who would give to such men the answer that the old lady gave to her pushing grandson when he sought to explain to her the philosophy of sucking eggs would be a gain to medical journalism.

And so on. It is weary work classifying the bores and the fools; and it would be wearier work crushing them. We are a polite people, we practitioners of medicine. Soothing the bodily pangs of suffering humanity seems to beget in us a sentimental horror of hurting the mental feelings of our worrying brethren. But let us not overdo it. Too much salaaming may make the spine too flexible; and we want backbone. To stand up squarely and strongly against all these abuses; to fight them and to crush them—who shall do it? It must be done if we seek to rise to higher levels. How are we to do it?

Here are our motives: to push aside the chatterer; to make the worker speak; to bring measures to the front, not men; to eschew all appearance of artificial advertisement, either for measures or for men; to let both measures and men rest on real merit; to speak the truth, and nothing but the truth, of men, of books, of papers, and of work; and throughout to have our purveyor of intellectual food like the high-class purveyor of material food, not only stand at the door and personally see that nothing inferior or unwholesome is distributed from his establishment, but also actively go out and seek for the best procurable pabulum for his customers. Such a man will not only stimulate the producer to surpass himself in invention; he will also crush out the incompetent and the careless. He is greatly wanted in our literary world.

May we hope for a higher medical journalism in these islands? Shall we ever see a journal in which every page records good work by capable workers, and every sentiment bespeaks honest thought by vigorous minds? Or must it be our doom all our lives, seeking for the grain of wheat, to have to hunt through those heaps of journalistic chaff?

I expect no more than has been. I will speak only of my own department of practice—surgery—and I will quote as an instance the *Transactions of the Royal Academy of Surgeons of Paris* as they appeared a hundred and more years ago. If all the societies, and all the associations, and all the colleges of all the English-speaking medical men (and women) in Europe, Asia, Africa, and America were at the end of the nineteenth century to give to the world a few such volumes as these few workers in France gave it at the end of the eighteenth century, I should be content. After a hundred years, with all our opportunities, we have seen no such work as this—so good, so abiding, so thorough. Why is this? Is it that the standard being lower the whole work suffers? The standard must be low when it is in effect the voice of the multitude, the behest of a "wide circulation." Are we, then, with our claims and our motives, to work down to this standard? or shall we not rather seek to create a higher standard—a standard with no upward limit, but with a very decided lower one? Shall we ask our brethren to raise their intellects to our literature; or shall we continue to make our literature easy for our brethren's brains?

Literature made easy is literature easily made. Journals are numerous, pages must be filled, and writing must be encouraged. On the same platform, with the same audience and for the same time, any one man may talk as long as any other. In order that he who runs may read, it would seem as if the writing were done running. All may write; all may speak; and all *must* read, and listen. Surely our medical republic of letters is the freest and openest of all. If letters could keep wisdom alive, surely *we* are the people and wisdom will die with *us*.

A Case of Non-penetrating Gunshot Wound of the Heart.—In the *Nouveau Montpellier médical* for January 6th there is an article contributed by Dr. S. Morer, of which the following is the substance: On the 11th of October he had been called upon to examine a woman who had been shot in the chest three days before. She was breathing heavily and complained of a pain in the anterior region of the chest. A small wound, three millimetres in diameter, was found on the right side of the sternum, a little to the outer side of the median line at the level of the sternal insertion of the fourth rib. This wound, which was black-looking and surrounded with dried blood, gave issue to a little stream of black blood. This stream felt in a slight degree the action of respiration, but was not mingled with air, and there was no wheezing sound such as follows the entrance of air into the thorax.

At the time of the shooting the woman did not lose consciousness, but felt a terrible pain and oppression. The wound was still bleeding, although the flow of blood was greatly diminished. The patient had made a long journey to appear before a judge, and was so weak that her entrance into a hospital was ordered, where she was at once examined. The examination of the chest showed a slightly accelerated action of the heart, but without any abnormal modifications. The patient complained of an intense præcordial pain, the cardiac dullness was somewhat increased, the circulation was bad, and the face and the nails were very slightly cyanosed. The lungs and the pleura did not show any lesion, but the respiration was very much accelerated. A probe was introduced with all necessary precaution into the wound, and touched a hard substance which gave a metallic sound and seemed to be imbedded in the middle of the sternum, at which point the probe was stopped at a depth of a little less than a centimetre. A small incision showed nothing but fine splinters of the sternum. Under those circumstances the wound was closed with a dressing of collodion and iodoform, thus making an exact occlusion, and over that a dressing of cotton. This was done after the wound had been washed with antiseptics. The patient was pregnant and very near the time of her confinement. Owing to objections on the part of the woman, an examination as to the state of the uterus was impossible, but the child was alive and its movements were perceived on several occasions. Bouillon, coffee, and antispasmodics were prescribed.

On the 12th of October the temperature in the morning was 98·2° F., and the patient complained of severe pains in the abdomen, but she refused to allow any examination to be made. In spite of the careful dressing of the wound, the blood continued to flow freely through the dressing and on to the bed. The patient complained of the præcordial pain, the cardiac dullness had distinctly increased, and the heart beats were faster and fainter than they day before. A continuance of the treatment was prescribed, also cupping on the præcordial region was ordered. The dressing of the wound was changed as often as it was necessary. The temperature in the evening was 101·3° F.

During the night the patient, who complained greatly of pain in the abdomen, diverted the attention of the nurse for a moment, got up from the bed, seated herself on an inverted vessel, and, leaning against the wall, gave birth to a child, who appeared vigorous and perfect. The nurse became aware of what was happening, and found, to her great surprise, the fœtus connected with the placenta by an umbilical cord which was flabby and discolored. The mother complained of severe abdominal pains, but the præcordial pain was less intense, and the beating of the heart was fast and faint, although not irregular. Absolute rest was prescribed.

On the 13th the temperature was 97·7° F., the abdominal pain was very distressing, and the patient manifested great dread at the thought of having any one touch her abdomen. Meanwhile the nurse found that the flow of blood from the vagina was normal. On auscultation of the heart, it still remained the same, and the dressing of the wound continued to be saturated with a quantity of sero-sanguinolent liquid. The temperature in the evening was 99·4° F.

On the 14th the temperature was 98·2° F. The patient asked for food, she seemed to feel better, and she looked more rested, although the præcordial pain was still acute. The liquid which flowed from the wound seemed to diminish, and it was less sanguinary; there was no appreciable modification of the sounds of the heart, the dullness was still very extensive, and there was a slight odor about the wound, in spite of the careful dressing of iodoform. In the evening the temperature was 100° F. There was great difficulty in breathing, and the patient had to be supported with pillows. At no time was difficulty of swallowing perceived or any abdominal symptom.

On the 15th the temperature was 101·4° F., and the patient was weaker. The pulse, equal on both sides, was rapid and feeble; the præcordial dullness, already very considerable, was still more pronounced, the heart beats were fainter, the breathing was heavier, and it seemed for a moment as if air had entered the wound. There was a little diarrhœa. Another application of cups was prescribed, which did not, however, bring the desired result. In the evening the temperature was 102° F.

On the 16th the temperature was 100° F., the flow from the wound, which had been arrested, began again, and grave local and general symptoms persisted. The temperature in the evening was 100·7° F.

On the 17th the temperature was 102° F.; the general condition was aggravated, the cyanosis was more intense, there was a little subdelirium, the præcordial dullness was enormous, the sounds of the heart were more distant, and the bleeding had ceased. The patient died at midnight.

The autopsy showed a single injury of the sternum, about three millimetres in diameter, with well-defined borders. The wound was situated on the right side of the sternum, near the median line and above the sternal insertion of the fourth rib. Along the tract of the injury were pieces of splintered bone. The pericardium, distended and fluctuating, presented, at a point corresponding to the sternal injury, a black, sanguinolent opening, stopped up by a clot of blood and surrounded by a little emphysematous areolar tissue. This opening was single and very well defined. When the sternum and costal cartilages were raised, the excessive enlargement of the pericardial sac was to be seen reaching as high as the clavicle; on the left side in contact with the ribs as far as the axillary line; on the right almost passing beyond the right edge of the sternum; and from before backward extending from the sternum to the spinal column, from which it was separated by the vessels and the œsophagus; below, the pericardium was not perceptibly extended, only to the level of the sixth rib.

On opening the pericardium, a lemon-colored liquid, in which were some light, fibrinous flocks, ran out. Light, frothy clots floated on this liquid, which had filled and distended the pericardial sac; a light, muddy liquid, in which were some more fibrinous flocks adherent to the serous pericardium. This liquid was removed, by taking it up in the hollow of the hand, into the space shut in by the distended pericardium. The heart had fallen to the bottom of the sac. The walls of the pericardium did not fall in, but kept the position caused by the distention, showing distinctly the form of a triangular pyramid at the base of the pericardial sac. The heart showed a small, round wound about three millimetres in diameter, situated about half-way between the apex and the auriculo-ventricular groove on the right border of the heart. This wound, which was single and not very deep, involved only the thickness of the wall. It ended in the network of the inner muscles of the heart, which had prevented the further penetration of the bullet. At the bottom of the pericardium two bullets and two small splinters of bone which had been carried with them were found. The bullets were enveloped in a very thin magma of fibrin. After the heart had been opened, in order to ascertain the non-existence of penetration, discolored spots corresponding to the exterior wound were seen at the posterior and external part of the principal muscle of the tricuspid. No other lesion of the heart was noted.

From a diagnostic point of view, the absence of hæmorrhage, the perfect preservation of the cardiac rhythm, and the absence of abnormal heart sounds would be sufficient cause to make lesion of the heart doubtful; but the distance of the impulse and the heart sounds, the præcordial pain, the bulging, and the enormous effusion into the pericardium, with the abundant serous flow from the wound, proved that lesion of the serous pericardium did exist. The absence of symptoms in other organs (pleura, œsophagus, and lungs) compelled the admission that the lesion of the pericardium was isolated. As for the foreign substances found in the pericardium, which probably had been the principal cause of the pericardial irritation, their presence could only have been suspected, no symptom of it having been observed.

With regard to the treatment, in Dr. Morer's opinion, it had been altogether insufficient. At the end of the fourth day occlusion had been attempted, in the endeavor to diminish and finally to stop the flow, which was the safety-valve of the pericardium. Fortunately, it had not been successful, as was shown by the saturated state of the dressing, which had had to be changed several times during the day. Is this treatment with occlusion, the author asks, always justified? In his opinion, never. It is a convenient way, in the beginning, of concealing the surgeon's inability, but it is absolutely injurious to the wounded person, as was proved in 1877 and 1878 in the researches of F. Franck and his pupil Lagrolet. According to them, sanguineous effusion, as soon as it has become of a certain importance, compresses the auricles, and consequently the flow of blood toward the heart is suppressed, and then the ventricle, and finally the heart, ceases to beat. If the blood is effused outside of the pericardium, there is no danger except from the abundance of the hæmorrhage.

If the external flow of blood is not very abundant, one must remain a spectator, so to speak, of the event, contenting one's self with dressing the wound antiseptically. But if the wound is large and gaping, and blood flows from it at each contraction of the heart, then one must confine himself to moderating the beatings of the heart, which, concealed by an antiseptic dressing, increase the hæmorrhage which it is impossible to stop using applications of ice to the præcordial region, with bloodletting, as recommended by Rose, with absolute rest, and with injections of morphine. The first danger having been overcome, it is best to relieve the heart with repeated tapping rather than to reopen the wound, thus dealing only with the portion of blood that remains liquid, without disturbing the clots which may have formed.

There is thus some possibility of putting off rapid death and of awaiting the moment when, within the bounds of possibility, all fresh hæmorrhage will be averted. When this is achieved, if matters become more serious, owing to inflammation of the pericardium, or especially of the heart, revealed by the increase of temperature and the dullness, præcordial pain, circulatory troubles characterized by cyanosis, etc., there should be no hesitation in tapping the serous pericardium. This operation, if it had to be repeated, would without doubt be sufficient in case of serous effusion or sero-fibrinous effusion like that observed in the case mentioned. If at first, or during the course of treatment, the tapping reveals pus, a large opening should be made in the serous pericardium, a practice which is still to be followed if an abundance of clots is indicated. M. Morer prefers this method to making use of medicinal means, which are, unfortunately, he says, of doubtful efficacy.

The following treatment is prescribed for the inflammation: Revulsives, bromides, ice to the præcordial region, etc., to quiet the movements of the heart. Digitalis, which increases the vascular tension and the impulsive force of the heart, is contraindicated. Of course, the most rigorous asepsis is indispensable, and the author would not venture to affirm that the inflammation in this case had been influenced unfavorably by insufficient asepsis of the wound or by the puerperal condition of the wounded person.

An Artificial Medium for Tuberculosis Cultures.—E. A. de Schweinitz, Ph. D., of the Biochemic Laboratory, Department of Agriculture, Washington, writes to us as follows:

In March, 1893, I made a note* of the use of Fermi's modified solution of mineral salts for the cultivation of the tuberculosis and other germs. As in this a small percentage of peptone was added to the liquid, while it is desirable to obtain a medium, if possible, perfectly free from albuminoid matter, I have since found the following solution adapted to the growth of the tuberculosis bacillus:

Distilled water....	1000 c. c.;
Magnesium sulphate..............	0·2 gramme;
Acid potassium phosphate.........	1·0 "
Ammonium phosphate............	10·0 grammes;
Sodium chloride...	10·0 "
Asparagine............	2·0 "
Glycerin	70 c. c.

The multiplication of the tuberculosis bacillus upon this liquid is not quite so rapid as on one containing peptone, but is equally characteristic and is promising for further study. Its use may prove of service to other investigators.

The New York Academy of Medicine.—The special order for the meeting of Thursday evening, the 1st inst., was a paper on The Prevention of Disease, by Dr. W. W. Potter, of Buffalo.

At the next meeting of the Section in Public Health, Legal Medicine, and Medical and Vital Statistics, on Wednesday evening, the 7th inst., the chairman, Dr. J. West Roosevelt, will read a paper on The Protection of the Water-supply of Cities in this State.

At the next meeting of the Section in Surgery, on Monday evening, the 12th inst., Dr. W. T. Bull will read a paper entitled Further Observations on Chronic Relapsing Appendicitis.

At the next meeting of the Section in Genito-urinary Surgery, on Tuesday evening, the 13th inst., Dr. R. W. Taylor will read a paper on Cancer of the Penis and the Groin.

At the next meeting of the Section in Neurology, on Friday evening, the 16th inst., Dr. Charles H. Knight will read a paper on Reflex Disturbances allied to Lesions of the Rhino-pharynx; Lightner Witmer, Ph. D., of Philadelphia, will read one on Pain from the Point of View of the Psychologists; and a gentleman whose name is not announced will read one on The Physiology of Deglutition in its Relation to the Nervous System.

The Medical Society of the District of Columbia.—The programme of the celebration of the seventy-fifth anniversary, to be held at the National Rifles' Armory Hall, G Street, between Ninth and Tenth Streets, N. W., Washington, D. C., on Friday, February 16, 1894, beginning at 7.45 P. M., includes the following titles of addresses: Address by the president, Samuel C. Busey, M. D., LL. D.; Address of Congratulation, by Theophilus Parvin, M. D., LL. D. (representative of the College of Physicians of Philadelphia); The History of the Medical Society of the District of Columbia, by W. W. Johnston, A. M., M. D.; The History of the Hospitals of the District of Columbia, by J. Ford Thompson, M. D.; and The History of the Medical Colleges of the District of Columbia, by Thomas C. Smith, M. D. A banquet will be given to the specially invited guests at the Arlington.

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* *New York Medical Journal*, March 11, 1893.

THE NEW YORK MEDICAL JOURNAL, FEBRUARY 10, 1894.

Lectures and Addresses.

LECTURES ON THE DIAGNOSIS OF ABDOMINAL TUMORS.

By WILLIAM OSLER, M. D.,
PROFESSOR OF MEDICINE, JOHNS HOPKINS UNIVERSITY.

LECTURE I.—TUMORS OF THE STOMACH.

(*Concluded from page 134.*)

CASE IX. *Nodular Tumor Mass in the Region of the Pylorus; Dilatation of the Stomach.*—Rachel C., aged sixty two years, admitted February 13th, complaining of a lump in the right side of the abdomen. Mother died of pulmonary tuberculosis.

With the exception of pulmonary hæmorrhages, of which she has had in all nine attacks since her nineteenth year, and an attack of transient left-sided hemiplegia of five days' duration, she has been a healthy woman. Has had ten children. No special history of dyspepsia.

On September 15th she had for the first time severe pain in the upper part of the abdomen, which continued for nine days, and was intense enough to keep her from sleep. Soon after this she felt a lump in the right side, which has all along been painful and associated with a dragging feeling when she lies on the left side. At intervals she has a puffed, distended feeling in the abdomen with diffuse soreness. Her appetite has been poor, and she has had nausea sometimes after eating, and has several times at night had attacks of vomiting. She has had no swelling of the legs. The urine is clear; no special diminution in amount. Patient is emaciated, sallow; tongue coated, white; pulse is 88, regular, tension a little increased. There is a soft systolic murmur at the apex; with the exception of hyperresonance in the front and sides, and exaggeration and prolongation of the expiratory murmur, there are no changes to be noted in the lungs.

Abdomen.—There is a slight prominence in the right hypochondrium, and on inspiration a tumor mass can be seen to descend in the parasternal line. On palpation in this region, just below the costal margin, there is a hard, rounded mass, the outline of which can be pretty clearly made out toward the median line, but toward the right it is apparently continuous with the margin of the liver. It is superficial, nodular, hard, and very painful. On deep inspiration, it descends almost to the level of the navel, and the fingers can be then placed between the tumor and the liver margin, and it can be held down. Gas can be felt bubbling through the mass. On percussion, there is a flat tympany. When quiet and in repose no peristalsis can be seen as a rule. When the patient turns over on the left side the mass falls forward and to the left, and can readily be grasped between the hands. The epigastric region is a little flattened; sometimes distinctly depressed. The lower umbilical region, on the contrary, is full.

On dilatation with tartaric acid and bicarbonate of sodium, the stomach is seen to be depressed and dilated. The lesser curvature passed just at the level of the navel; the greater curvature at a distance of seven centimetres below. Waves of peristalsis were then seen in the stomach walls passing from left to right, and sometimes the organ showed an hour-glass contraction.

The test breakfast showed the presence of the organic acids, absence of free hydrochloric. Material washed out was dark in color and smelled very sour.

The liver is not enlarged; the spleen not palpable; no enlargement of the external glands.

CASE X. *Enormous Dilatation of the Stomach, forming a Visible Tumor; Ridge like Thickening in the Pyloric Region.*—Emma H., aged thirty years, colored, admitted (to the gynæcological ward and transferred) April 28, 1893, complaining of swelling of the abdomen, nausea, and vomiting. Nothing of any moment in the family history. She was healthy until about eight months ago, when she began to have dyspepsia and distress after eating. She has not infrequently had attacks of vomiting. Lately she has been much nauseated after eating, and has had pain and swelling of the abdomen, with much belching. Six months ago she brought up food mixed with blood. Lately she has only been vomiting food. She has lost in weight within the past year, and has noticed that she passes much less urine than formerly. The patient is moderately wasted; weight, a hundred and five pounds; lips and mucous membranes of good color. Temperature normal; pulse, 112. The abdomen is flaccid, but a little prominent, and, on inspection, very marked waves of peristalsis are seen passing from left to right. They occupy a considerable area, extending from just below the costal margin to midway between the navel and the pubes. As they pass, the skin is lifted in very definite prominences. On palpation, there is very marked succussion, and, on changing from side to side, the dullness alters as the fluid sags with the change of position. On inflating the stomach, it is found to occupy nearly the whole abdomen. The tympany begins above at the fifth rib and extends to the pubes. The lesser curvature is seen just above the umbilicus. There is very prominent distention in the pyloric region, and the gastric tympany extends nearly to the right anterior superior spine. No nodular masses or tumor could be felt. With the stomach tube a large quantity of a greenish-yellow liquid with remnants of food was removed. When the stomach was emptied there then could be felt midway between the umbilicus and the costal margin a ridge-like mass about the size of the thumb, which was freely movable and descended with inspiration, and which subsequent examinations showed was extremely variable, not being palpable when the organ was very greatly distended. With lavage and feeding at short intervals the patient improved very much and the stomach reduced very materially in size and she gained in weight.

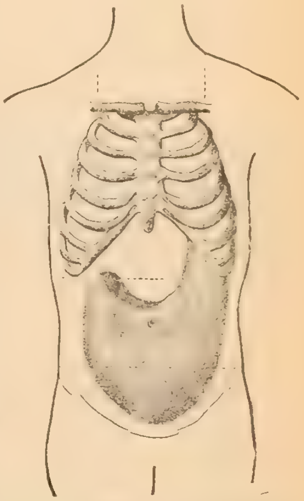

FIG. 8.—Outline of the stomach in Case X, showing the position of the ridge-like mass.

From the prolonged history of dyspepsia and the fact that she had on several occasions vomited blood, this was very probably an instance of dilatation from the cicatrization of an ulcer; and the small, elongated nodular thickening in the region of the pylorus also suggested this condition.

General Remarks on the Diagnosis of the Tumor caused by Dilated Stomach.—Inspection gives most important information, the value of which may be gathered from the fact that in these ten cases the diagnosis was made *de visu*. Bear in mind, in the first place, that a dilated stomach may occupy every region of the abdomen except the upper part of the epigastric and may form a very prominent tumor. The photographs (Figs. 9 and 10) which I show you illustrate this very well. They were taken during life from a woman, aged sixty-five years, who was admitted to the hospital complaining of attacks of vomiting which had persisted for nearly two years, during which time she had become gradually emaciated and very weak. She had at intervals brought up enormous quantities of fluid. On inspection, the abdomen was greatly distended, particularly on the left side and in the umbilical and hypochondriac regions. It was uniform, but at intervals there were slight irregularities and elevations; no marked waves of contraction. On palpation, the abdomen was everywhere soft, except at a point to the right of and just below the navel, where there was a hard, resistant mass. At first it seemed scarcely possible that the entire abdominal distention could be due to a dilated stomach, but the reduction in size after vomiting and after lavage, the depth to which the stomach tube could pass, and the irregular waves of protrusion left no doubt that the distention was due to an enormously dilated stomach. She died November 16, 1889. The photographs (Figs. 9 and 10) show the profile and front views taken during life, and Fig. 11, from a photograph taken after death, shows the position of the organ and its enormous enlargement. There was cancerous stricture of the pylorus.

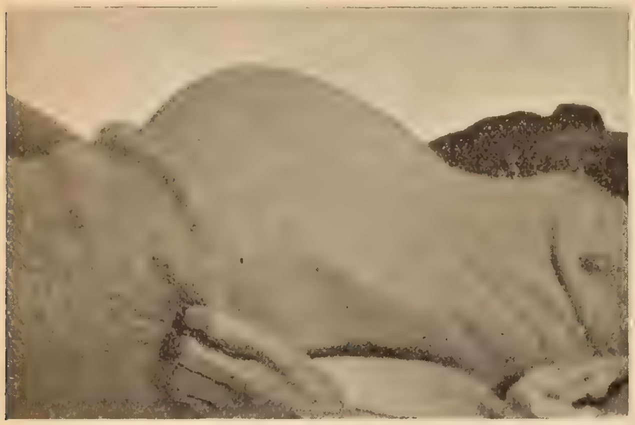

FIG. 9.—Profile view of the abdomen of Sarah A., aged sixty-five, showing the tumor formed by the dilated stomach. From a photograph taken during life.

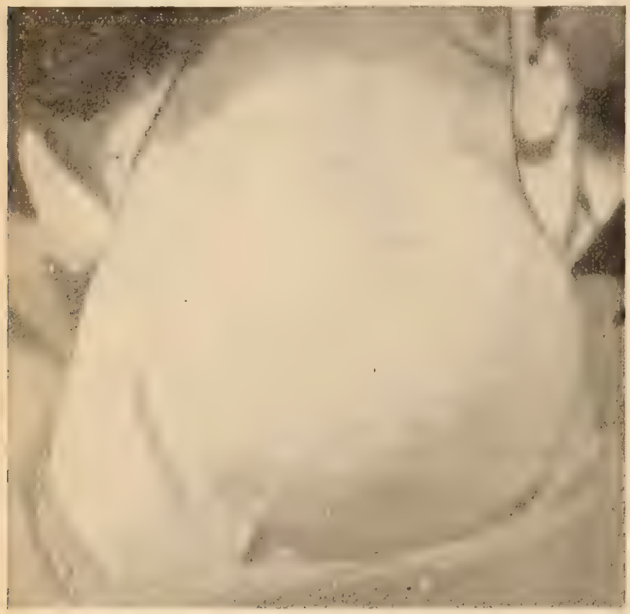

FIG. 10.—Tumor of the abdomen caused by a dilated stomach; case of Sarah A. From a photograph taken during life.

The most prominent distention is usually in the left half of the umbilical region, but it may be chiefly below the navel.

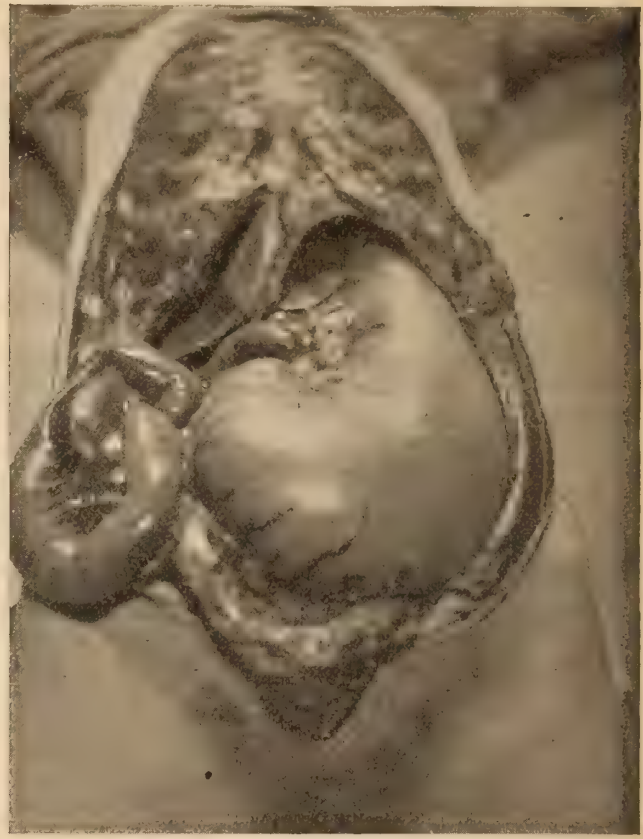

FIG. 11.—Showing the position and size of the stomach in Sarah A. From a photograph taken at the autopsy.

A definite stomach contour may be seen very plainly in many instances of dilatation from stenosis of the pylorus. At intervals, during the contraction of the stomach walls, the outline of the greater curvature descends on the left side, curving at a level of the anterior superior spine, and passing to the right at a variable distance above the pubes, sometimes not more than three or four centimetres, sometimes midway between the pubes and the navel. Curving upward, it ends either in the left lumbar or more frequently in the right upper quadrant of the umbilical region, sometimes appearing to pass beneath the right costal margin. The lesser curve is frequently much more distinct, the line passing vertically parallel with the left border of the sternum or in the parasternal line, curving to the left of the navel, and often during the contraction of the organ forming a very well marked, sharply defined contour at or a little below the level of the navel. I have found the greatest surprise expressed by practitioners that the stomach should be so low, that even the lesser curvature should be below the level of the navel; but this is frequently the case in extreme dilatation. In the first place, then, the outline of the organ may give to you at a glance the diagnosis. Secondly, inspection is of the greatest value in determining the presence of peristalsis. Though enormously stretched, there is hypertrophy of the muscular coats and great increase in the activity and frequency of the movements. In all of the cases they were present. The movements are of two kinds, which may be seen together or separately: First, peristaltic waves, passing slowly from left to right, more rarely antiperistalsis, from right to left. The mere exposure of the abdomen to the cool air is usually sufficient to excite them. Sometimes the stimulus of palpation is required, or the flapping of the skin with a wet towel. During the passage of these waves the outline of the organ becomes evident; sometimes, as already noted, the greater and lesser curvatures are plainly to be seen. Sometimes, too, as the waves reach the pyloric region a tumor mass may be rendered visible or made more prominent. The stomach may be so enormously dilated that the walls are in a condition of paralytic distention and no peristaltic waves are seen, as in the case from which Figs. 9 to 11 were taken.

A second variety of movement to be seen in a dilated stomach consists in a slowly performed irregular protrusion here and there of the stomach wall, which lifts the skin of the abdomen in a hemispherical boss or prominence. This may develop at any point, more frequently toward the greater curvature. They usually occur with the peristaltic waves and in combination may throw out in bold relief the contour of the organ, sometimes also giving to it a somewhat hour glass shape, owing to corresponding depressions about the middle of the greater and of the lesser curvatures. The upper depression is seen in Fig. 1. These irregular protrusions may be seen in enormously dilated stomachs, in which the peristaltic waves are no longer visible, as in the case just mentioned, of which I have shown you the photographs. Let me again emphasize the value of inspection by reminding you that of the thirteen instances, in ten the diagnosis was manifest on inspection alone.

Palpation.—Four points may be determined by this procedure. The existence of the splashing sound or succussion, the *clapotage*, which is always present, and which, though in no way diagnostic, yet is of value in connection with a prominence in the left flank and lower umbilical region. It is of use also in determining the lowest level of the organ. With the hand on the abdomen, as the peristaltic waves pass, or as the irregular protrusions develop, you will notice that the organ hardens; and toward the pylorus, as the wave is followed, there may be an exceedingly firm contraction. After persisting for a minute or so the muscular walls relax and are again soft and readily depressed. In some instances the muscular contraction at the pylorus is extremely firm and hard, and the relaxation beneath the hand reminds one of that of the uterus. A third point of importance, particularly in palpation of the pyloric region, is the gurgling of gas through the pyloric orifice. This is usually very marked when the stomach is inflated, but it may occur spontaneously and in some instances at regular intervals. In doubtful tumors of this region this is a sign to which scarcely sufficient attention has been paid. Its importance will be referred to again in connection with tumors of the intestines, as in one case in the series it saved us from a somewhat serious error. And lastly it is by palpation chiefly that we are enabled to determine the presence or absence of a pyloric tumor. And here you have to bear in mind that in dilatation of the stomach the pyloric tumor may be extremely variable, readily felt to-day, scarcely palpable to-morrow, dependent very much upon the grade of distention. You will find this very strikingly illustrated after washing out the stomach, when perhaps a comparatively small pyloric mass may be found to be quite large and prominent. When the organ is extremely dilated, the tumor may be scarcely palpable. This was particularly well illustrated in Case VII, which was sent to me by Dr. Salzer for an opinion as to the advisability of a Loretta's operation. The tumor at the pylorus, which at the first examination seemed not larger than a walnut, after thoroughly emptying the stomach was found to be a solid mass the size of an egg.

Percussion combined with palpation brings out most clearly the splashing sound, which in cases of extreme dilatation may be most evident below the transverse navel line. The extent of stomach tympany will vary with the position of the patient. In the recumbent posture it may extend in the nipple line from the fifth costal cartilage to within two or three fingers' breadth of the pubes. In the erect posture a line of transverse dullness may be accurately defined, which will sink as the patient is gradually placed in the recumbent position. The extent of stomach tympany varies, of course, with the amount of fluid contents, and after the attacks of vomiting in which large quantities of liquid are brought up it may be very much extended.

In doubtful cases inflation of the organ is a most valuable method, and is best accomplished by the use of the bicarbonate of sodium and tartaric acid, from half a teaspoonful to a teaspoonful dissolved separately and taken one after the other, the patient being directed to refrain, as far as possible, from belching. Inspection may, through thin abdominal walls, at once reveal the distended stomach, displaying active peristaltic movements. The percussion limits can then be also more definitely defined. Palpation in the pyloric region may give the sensation of gas bubbling through into the duodenum. This method of inflation is more satisfactory on the whole than that of pumping air into the stomach. When gastric ulcer is suspected these proceedings should be practiced with great caution or omitted altogether.

Auscultation gives little information of value. One hears the sizzling sound of the gas as the contents of the stomach are churned about; sometimes quite loud gurgling is heard as the fluid passes through the pylorus, often loud enough to be heard at a distance. The succussion splash may be obtained by placing the ear upon the abdomen, and either shaking the patient or asking him to depress suddenly the diaphragm.

The characters of the contents of the dilated stomach, the general symptoms, and special features I shall not discuss, as the subject before us is more particularly the form of abdominal tumor caused by it. To one special point, however, I may refer, as it is of some moment in the treatment of these cases of dilatation from stenosis of the pylorus. The recent experiments of von Mering show that water is not absorbed to any extent from the stomach, but is passed into the intestine, usually at regular intervals, by a rhythmical opening and closing of the pylorus. Not only is the resorption of water extremely slight, but hand in hand with the absorption of the sugars and peptones there is actually a secretion of water corresponding in some measure to the amount of substances absorbed. With these facts correspond closely certain points in the history of dilatation of the stomach. The organ is never empty, and even after it is pumped out as much as possible, fluid will reaccumulate without any liquid having been taken; and frequently patients will remark in astonishment that the amount which they have vomited far exceeds in quantity what has been taken by the mouth. This explains also other striking symptoms in excessive dilatation of the stomach—namely, the great reduction in the amount of urine secreted, the dryness of the skin, and the wasting, which is proportionate to the degree and persistency of the dilatation rather than to the nature of the obstruction. Unverricht has suggested to supplement this water depletion by the use of large enemata, two litres daily of salt solution, the use of which he states has been followed by marked improvement in the symptoms, and in some instances by an increase in weight.

And, lastly, there is the question, What conditions may be confounded with dilatation of the stomach? Nothing, in reality, if the examination is made systematically and thoroughly. The physical signs alone are generally sufficient, and, when taken in connection with the general symptoms, quite distinctive; thus there was not one of the cases in this series about which a shade of doubt existed. Yet mistakes have arisen, some of a remarkable nature, owing to ignorance of the fact that the dilated organ may be chiefly to the left of and below the umbilicus. The tumor has been mistaken for an ovarian cyst (*Detroit Lancet*, January, 1880), and even after tapping and the withdrawal of a dark-colored fluid containing grains of rice, pieces of potato, bread, meat, etc., laparotomy was performed for ovarian tumor. The enormous dilatation, as shown in Figs. 9 and 10, with paralytic distention and absence of the peristaltic waves, might, and indeed did, when the stomach was very full, simulate ascites, but no serious difficulty could arise in the differentiation. Tumors of the colon, causing obstruction, lead to great distention of the large bowel, in which active waves of peristalsis may be seen passing from right to left. Usually the abdomen is distended more uniformly or chiefly in the epigastric zone, and intestinal, not gastric, symptoms have been present, and the inflation of the stomach alone, or, if practicable, combined inflation of the stomach and colon, will usually give information upon which you may base a definite conclusion.

A dilated stomach, causing a prominent tumor of the abdomen, is almost invariably due to stenosis of the pylorus. As already mentioned, in all of the cases a tumor was evident, and in all the condition was that to which the term dilatation of the stomach is more correctly limited. In rare instances a prominent tumor may be caused by muscular insufficiency, as it is called, or atony of the stomach, and occasionally, by change in the position of the organ, the so-called *descensus ventriculi*. The differential diagnosis of these conditions you will find fully given in the special works above mentioned. I may, however, remark that only in very exceptional instances of atony of the stomach or of descensus ventriculi are the peristaltic waves seen. In women who have borne many children, and who have the extremely relaxed abdominal walls, the condition which Glénard has termed enteroptosis may be associated with great depression and enlargement of the stomach. In some cases the decision is very difficult. I show you here the stomach outlines of a patient who at first we thought had dilatation of the stomach from pyloric obstruction. The organ reached nearly to the pubes; the lower curvature was, however, at the umbilicus. The vertical measurements of the stomach were twenty centimetres in the middle line, thirty-one centimetres from the lower border of the eighth costal cartilage to the middle of Poupart's ligament, and the transverse diameter twenty-eight centimetres and a half. Occasionally there were to be seen peristaltic waves crossing from left to right. No tumor was at any time to be felt. The liver was depressed; the kidneys were movable. The examination for free hydrochloric acid was variable; sometimes it was present, sometimes absent. She had had dyspepsia for some years, and within the year much belching and some vomiting, but never of very large quantities of liquid. With lavage and careful dieting she improved very much, and gained fourteen pounds in three months. We subsequently lost sight of her.

II. TUMOR FORMED BY CONTRACTED STOMACH.—There are two conditions in which the stomach itself, in a state of contraction, may form a definite, palpable tumor—first, in occlusion of the œsophagus, when the organ shrinks and may be sometimes felt as a narrow, firm cord, lying below the margin of the left lobe of the liver; and, second, when there is diffuse thickening of the stomach walls with contraction of the lumen in cirrhosis or in diffuse cancerous infiltration. The following is a remarkable instance of the latter condition, which presented a well-marked tumor:

CASE XI. *Tumor in the Epigastric Region, consisting of the Stomach diffusely Infiltrated with Carcinoma.*—George H., aged sixty years, tailor by occupation, German, admitted on April 4, 1893, complaining of indigestion.

Has always been strong and well; had gonorrhœa when twenty; has been a moderate drinker; does not use tobacco.

Present illness began about five months ago with uncomfortable feelings in the epigastrium and constipation. Prior to this he states that he had no dyspepsia. Soon he began to have much distention after meals, and water brash. He has never had any vomiting, but he spits up a great deal of mucus. There is sometimes a sharp pain in the abdomen, but, as a rule, there is only a heavy, uneasy sensation after eating. In January he noticed that there was a swelling above the left clavicle. In March he had one or two attacks of vomiting, and he has been much troubled with hiccough.

He applied at the dispensary about the end of January, and a stomach tube was introduced, but it brought up a little blood. Since his illness began he has lost forty-five pounds in weight.

Present Condition.—Considerable emaciation; lips and mucous membranes of good color. Above the left clavicle the lymph glands are enlarged and hard; slightly enlarged above the right. They are also somewhat enlarged in the inguinal region. The thoracic organs are normal.

The abdomen is flaccid, symmetrical; a little full, perhaps, in the epigastric region. On palpation, a ridge-like mass is to be felt in the left hypochondrium, which extends across the middle line to the right side as far as the parasternal line. It descends with deep inspiration as low as the umbilicus. The lower edge is very distinct and feels somewhat like a rolled omentum. It can scarcely be separated above from the liver, the edge of which is just palpable. There is a flat tympany over the mass. On inflation of the stomach, vomiting occurred and a good deal of distress.

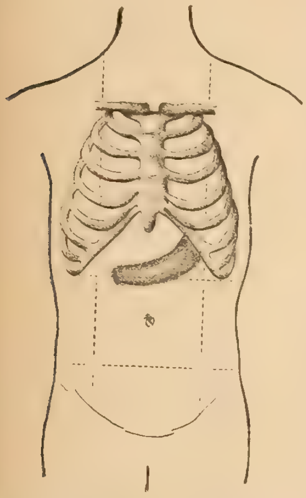

Fig. 12.—Showing the position of the tumor mass consisting of diffusely infiltrated stomach walls in Case XI.

The urine was negative.

On April 21st the patient had tenderness along the saphenous vein and the calf of the leg, and there was œdema of the ankle and of the leg.

The patient left hospital on May 5th, and died two days afterward at his home, where the autopsy was made by Dr. F. R. Smith and Dr. F. Fincke, who brought the specimens to the laboratory. There was nothing of special note in the thoracic organs except that there was some adhesion of the layers of the pericardium.

The peritonæum was smooth. The stomach, intestines, and mesentery were removed together. The liver was not enlarged, was a little granular on section, and firm. The omentum was uninvolved. The stomach was free on its anterior wall, on the greater part of the posterior wall, and on the greater curvature, but was closely adherent at the pyloric zone to the contiguous parts. The organ was reduced in size, measuring in its extreme length thirteen centimetres; transverse diameter, from four to five centimetres. It was extremely firm and dense, and the tumor mass which was felt during life corresponded to it, and the hard, resistant edge corresponded to the greater curvature. The orifices were not narrowed; the walls were extremely thickened, from eight to ten millimetres at the cardia, and from thirteen to fourteen at the pylorus. The thickening was due partly to the great hypertrophy of the muscularis, but chiefly to the submucosa, which measured from three to five millimetres. The mucous membrane was uniformly smooth, excessively thin, and showed no erosions or ulcerations.

On microscopical examination, the mucous membrane was almost entirely deficient. The submucosa was occupied by large groups of cancer cells between strands of connective tissue. The layers of the muscular coat were much hypertrophied, and, invading the interstitial tissue and sometimes in the muscular bundles themselves, were numerous cancerous cells.

The pancreas was firm and hard and uniformly surrounded by thickened peritoneal tissue, infiltrated in places with cancerous new growth. The substance of the gland itself was normal. The mesentery was enormously thickened, measuring close to the root three centimetres. The peritonæum was thickened, presenting in places flat areas of carcinoma, and the mesenteric glands were uniformly enlarged and cancerous.

While we regarded this case as one of cancer of the stomach, we certainly were not aware of its remarkable character. The tumor so readily felt was thought to be an infiltration of part of the stomach wall, whereas in reality it corresponded definitely to the organ itself. The diffuse infiltrating carcinoma has to be carefully distinguished from the true cirrhosis of the stomach, consisting of fibrous overgrowth. The distinction can, however, only be made by the microscope, unless, of course, there is secondary infection of glands and neighboring organs. In this instance the lymph glands were infected, and I would call your attention particularly to the fact that the supraclavicular glands on the left side were also involved—a situation in which secondary tumors are sometimes seen in cancer of the stomach and of the œsophagus, and in which their presence may be of the greatest value in diagnosis. Not only may there be a primary infiltrating carcinoma of the stomach not distinguishable macroscopically from cirrhosis of the organ, but Dr. Welch, in showing this specimen at the Hospital Medical Society, called attention to an instance which he had reported of secondary infiltrating carcinoma of the stomach in a woman, aged forty years, who had double carcinoma of the ovaries. This beautiful plate, in Carswell's *Morbid Anatomy*, illustrates the condition very well.

Original Communications.

OCCURRENCE OF INTERNAL ANEURYSM IN EUROPEAN RESIDENTS OF JAPAN.*

By STUART ELDRIDGE, M. D.,
YOKOHAMA, JAPAN.

A REMARKABLE fact in the medical history of European residents in the Japanese ports—and the same is true within limits of certain of the Chinese cities open to foreigners—is found in the excessive proportion which thoracic and abdominal aneurysm bears to other causes of death. I can speak from personal observation only of the so-called foreign settlement of Yokohama in central Japan. This is the largest community of European blood existing in the Empire, and has probably averaged from two thousand to twenty-five hundred souls during the past twenty-two years, this being the limit of my experience. Of this population, adult males have always formed more than half, and are still in excess. As it is to this class that aneurysm is strictly confined, the bearing of this fact must be considered in dealing with the mortality lists.

And here let me digress to say that, coming as I have to the home country in search of rest and health, I am without my notes or case-books, and can by no means present the subject I bring before you as I could wish to do. Aneurysm in its severer forms has, however, assumed such overweening importance in my professional life that, without attempting to deal with exact statistics, I trust I may be able to convey to you a fair idea of the relative prevalence, usual history, and characteristics of this disease as it is met with in foreign residents in the far East. During one term of seven years—1871 to 1877—for which I was able to obtain approximately accurate statistics, there were more deaths in the foreign community from aneurysm than were caused by any other disease with the exception of small-pox and phthisis. I believe, however, that as an exceptionally severe epidemic of variola occurred in 1871, and one of less importance in 1875, being almost the last of their kind among us, vaccination of the native population as well as foreigners of course becoming general and most effective immediately subsequent to these outbreaks, while the greater number of deaths from phthisis were those of recent arrivals or strangers, aneurysm during this period was, in reality, responsible for a greater number of deaths of residents than any other one disease. The cases upon which I base this statement were almost without exception clearly diagnosticated before death, either by my able friend and colleague, Dr. E. Wheeler, or by myself, or by both in conjunction, and verified by autopsy, or, as often happens, first became known at the post-mortem table. To these, beyond a doubt, though this would but enlarge the proportion borne by aneurysm to other diseases, should be added a considerable number of instances in which the victims of sudden death were buried under certificate giving the indefinite diagnosis of "heart disease" or "hæmorrhage." This applies not only from 1871 to 1877, but throughout the term of my experience. That I am correct in entertaining more than a suspicion that such has been, and is still, the fact will, I think, be granted when I tell you that some knowledge of individual cases in which this error has presumably occurred, supplemented by personal investigation as to symptoms and mode of death, has all but absolutely demonstrated the mistake committed; that lesions of the heart itself are decidedly rare in the European community, perhaps from the equal infrequence of articular rheumatism; and that cerebral affections, killing suddenly, are, save from alcoholism of an extreme degree, almost as uncommon.

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* Read before the Society of the Alumni of Bellevue Hospital, December 6, 1893.

The term of seven years of which I speak was probably approximately that during which the proportion of death by aneurysm to the total mortality was greatest. While I can not speak with even equal statistical accuracy of the occurrence of the disease in question during the following term of seven years—1878 to 1884—I am sure I am within bounds in saying that its frequency, while somewhat less than during the just previous septennate, was still very excessive, and probably far beyond that known in almost any other body of men of equal numbers. Since 1884 I think it beyond dispute that we have met with a decidedly smaller proportion of cases of this disease, though it is still abnormally frequent as compared with other serious maladies. The presumed cause of this early excess and later decrease in the occurrence of aneurysm will be touched on later, when dealing with the presumably general or local factors of causation. During the nineteen years of my private practice in Yokohama I have personally had to do with some forty cases of fatal aneurysm, thoracic or abdominal, within the resident European community. Nearly all of these were unmistakably recognized during the life of the patient, the diagnosis being confirmed post mortem. A few only were first detected in the deadhouse.

The experience of my friend and colleague, Dr. Edwin Wheeler, already mentioned, and also a practitioner of Yokohama for the past twenty years, has been singularly parallel to my own. While by far the larger proportion of cases have been within the individual or associated observation of the gentleman just named and myself, there have been others in the practice of almost every physician who has had professional dealings with the European residents.

I think I am not beyond the truth in asserting that, to the best of my knowledge, in this comparatively small community of two thousand to twenty five hundred people, including the classes not affected—viz., women and children—the deaths by aneurysm have during twenty years approximated to an average of five per annum.

As to the general character of the disease, I will say briefly that it attacks by preference the upper portion of the thoracic aorta, next the lower portion of the same, and less often the abdominal division of this great vessel. The proximal portions of both the thoracic and abdominal branches of the aorta are sometimes, though but rarely, affected. I have personally met with one case of aneurysm of the innominate, one of the left carotid at its origin, and one each affecting the splenic and right renal arteries. I have seen no case attacking the pelvic vessels except as the result of traumatism.

The excessive rarity of peripheral aneurysm in subjects so prone to the graver forms of this malady is most remarkable, and to me, upon any hypothesis, inexplicable. I have myself met with but one instance of the development of the disease in an artery of the limbs, and have reason to believe that aneurysmal dilatation of the cerebral vessels, whether macroscopic or microscopic, is nearly or quite as infrequent.

Comparatively rapid progress and early rupture is, I am inclined to think, almost universal, though to this I have known marked exceptions. While erosion of the vertebræ to a greater or less extent occurs in almost every aortic case, I have yet to see in a European resident in Japan marked absorption of either the ribs or sternum. Rupture generally occurs so early that, though the existence of the disease is comparatively easily determined by one of any experience, its location and extent can not be so defined as to warrant any attempt at surgical interference.

Now, to what are we to ascribe the excessive and altogether unusual prevalence of this important vascular lesion? It affects, or rather has affected, men of almost every position in life, although, as we have comparatively few absolutely poor people of European extraction in our community, the great majority of its victims have been men of relatively good social position, who had for years been in the enjoyment of ease and comfort, and not exposed to physical strain or to traumatic injuries of their vessels due to occupation. Nearly all the cases of the disease have occurred in those of prolonged residence in the far East, newcomers being as yet very infrequently attacked. I believe the great exciting cause of the disease to be syphilis, both on account of its undoubted effects upon the arterial system and because of the existence of a history of old and often severe venereal intoxication in most of the aneurysmal cases of which I am speaking. It is true that in some instances the closest investigation has failed to reveal evidence of syphilitic infection, but even here the circumstances and general medical history of the earlier European and American residents of Japan and China must be considered. When Japan was opened to foreign settlement, within limits, in the earlier sixties, syphilis had run riot among the natives for centuries, treatment of the disease being seldom administered and generally utterly inefficient. The result, so far as the natives were concerned, was that syphilis, acquired or hereditary, was in the lower classes almost universal, at least as concerns the urban population, while those of higher position could claim no exemption. It is a fact that—as was the case in the Iberian peninsula at the time of the Napoleonic wars, when, although Wellington's army of comparatively pure-blooded Englishmen was almost decimated by a peculiarly severe form of lues, the natives themselves appeared to suffer but little from its effects—the Japanese, considering the general distribution of the virus, rarely exhibited the graver and later lesions of the disease. Perhaps, as was supposed to be the case in the instance just quoted, a relative tolerance was acquired by inheritance. As suggesting the wide prevalence of syphilis at the time with which we are now dealing, it may be stated that in the year 1868, when the system of medical inspection and control of prostitutes, still in operation, was inaugurated by the lamented Dr. Newton, of the British Navy, examination of the frail sisterhood of Yokohama showed over ninety per cent. to be syphilitic, including those dealing with the native population, as well as the few filling the usual functions of their class as regards the seafaring and other foreign visitors.

The European settling in the far East in the earlier days found a community almost exclusively masculine; but few families were among the residents, and the softening, restraining, and elevating influences of good women were conspicuously wanting. The natural result followed; irregular connection with the lower class of native women was formed, though it should be said, in justice to these, that when ordinary precautions were taken cases of infection by regularly kept native mistresses have always been exceptionally uncommon. But these playthings, perhaps the least exigent of their kind on earth, exercised but little restraint upon their keepers, who, ranging at will through the enticing fields and gardens of a Japanese Cythera, often returned laden with an efflorescence which sometimes proved perennial. Undoubtedly alcohol and high living must be considered as also playing a part in determining the tissue changes which lie at the base of aneurysmal disease. Free and luxurious living was, and is still, almost universal among Europeans in Asia, though in many cases supplemented, and to a degree counteracted, by active exercise and anything but sedentary habits. I have said that I believe the great existing cause of aneurysm, as I have known it, to have been syphilis, and this belief is supported by the fact already mentioned—viz., that there has certainly been a progression and considerable diminution in the frequency of occurrence of the disease within late years. This is exactly what would have taken place supposing syphilis to be an essential element. Within the past fifteen years a marked change has gradually taken place in the social aspects of European communities in the Eastern world. The old Hong system, with its autocratic partners and crowds of highly paid and allowanced clerks, both unmarried, is a thing of the past. Money, when made at all, is made slowly and with labor. People come to stay for long terms or for life, bringing their families with them. The proportion of women to men has enormously increased, and there are many young girls, the whole forming a society which combines some of the best elements of life in Europe and America. From this has resulted a most decided improvement in the morals, and consequently in the health, of the community.

Another consideration which must be given due weight in this connection lies in the fact that even the best available treatment of syphilis was in the far East twenty or more years ago, as in some other countries at that time, most perfunctory and ineffectual. On the other hand, the vast majority of cases now met with and receiving enlightened modern treatment, sufficiently prolonged, I not only believe but know to be practically permanently cured. Still, though syphilis be the prime factor in the ætiology of the disease under discussion, there must be another determining cause. Syphilis, high living, and alcoholism are each and every one met with but too frequently elsewhere, and yet, so far as I have been able to ascertain, are nowhere followed by any such proportion of arterial disease as within the environment which we are discussing.

With regard to this unknown factor I have certain suggestions to offer, but they must be considered as suggestions only. The subject is as yet so obscure and all attempted solutions so entirely lack demonstration, or are, at least in appearance, so flatly contradicted by known facts, that he would be a bold man who, in the present state of our knowledge, should present a complete and rounded scheme of the pathology of the disease with which we have to do to-night. Is this undetermined influence of climatic origin? There are undoubtedly many reasons for believing that in humid climates, accompanied, as is often the case, by a comparatively limited range of temperature, as in England, to which in meteorological conditions Japan bears a considerable resemblance, aneurysm is exceptionally common. Certain parts of India and the coasts of China and Turkey are other cases in point. *Au contraire*, we are told that in Australia and California, where, I believe, the climatic conditions are essentially different, the disease is also very prevalent. Malarial intoxication has been suggested to me by my friend Dr. Wheeler as combining with syphilis to produce disease of the great arteries, at least in Japan. I find it difficult to believe this to be the fact. Malarial disease, though by no means uncommon in Japan, is generally of mild form, and chronic paludism of the marked and severer type is almost unknown, while I find no evidence that in regions where malarial influences are most widespread and injurious vascular disease of the form under consideration is at all general.

In this connection, and in view of the well-recognized association between diseases of man and of those domestic animals with which he is in closest relations—*e. g.*, hydatid disease in Iceland—certain facts relative to parasitic maladies in the far East, where such diseases are rife, are worthy of mention. There, many forms of filariæ are known to attack both men and animals. Among these may be briefly noted: 1. The *Filaria sanguinis hominis* of Manson, producing lymph scrotum, chyluria, and often, finally, true elephantiasis. 2. Filariæ infecting the heart and vessels of the dog. 3. Filariæ attacking and burrowing in the wall of the dog's œsophagus, and there causing small abscesses, which later, by weakening the wall of the contiguous aorta, produce aneurysms. This latter I long suspected might possibly be responsible for at least a part of the aortic lesions I have met with, and whenever able I have carefully examined the œsophagus in autopsies of cases of aneurysm, as well as other diseases, in the hope of finding evidence of existing or antecedent filarial infection. So far the result has been negative, though it should be said that as post-mortem examinations are rarely to be obtained, save in cases of sudden death, discovery of filarial lesions in their acuter stage, if made at all, would in all probability be accidental.

As to the treatment of internal aneurysm I have little to say. Iodide of potassium certainly exercises an almost magical effect upon the disease in producing relief of symptoms and, I feel sure, prolonging life to some extent. Tufnell's system, in one of several cases in which I have tried it faithfully, produced a somewhat encouraging though not entirely curative result. Surgical treatment I have already stated to be rarely practicable for the reasons given.

In conclusion, as I have had much to say in reference to syphilis as occurring in Europeans resident in the far East, a few additional remarks on this subject may not be without interest, although not directly connected with the subject of this paper. I do not think that syphilis, as contracted by Europeans in Japan and China, in any essential particular differs from that acquired by men of similar position and circumstances in Europe or America. I have already said that, under proper treatment—by which I mean mild prolonged mercurialization, all other treatment being accessory and symptomatic—the disease has been, in my experience, practically cured in the vast majority of cases. Witness families of children in robust health, the father in equally enviable condition, though having a history of perhaps severe and for a time neglected syphilis before marriage. Do not suspect from this that I allow my venereal patients to marry hastily, or without probation.

I meet among those personally treated from the beginning but very few lesions beyond the diagnostic roseola, nor do my patients often experience relapses, save when due to alcoholism or their own neglect. Even in apparently serious and inveterate cases—generally, I think, to be ascribed to insufficient or mistaken treatment in the earlier stage of the intoxication—syphilis in its deeper and more severe manifestations has been most rare within my observation. More especially is this true as regards syphilis of the nervous system, with the exception of a few isolated cases clearly due to gummata. Paresis of any origin, syphilitic or non-syphilitic, is conspicuous by its rarity, while that much-discussed disease or symptom, locomotor ataxia, is practically unknown.

Finally, let me beg you to remember that throughout I have been dealing with questions exclusively concerning people of European derivation, all remarks with regard to the native inhabitants being but incidental and explanatory. As, however, I have mentioned the former very general prevalence of syphilitic disease among the native population, it is but just to state that a very marked improvement has within late years occurred in this respect. When I went to Japan as a medical teacher the number of native physicians having any knowledge whatever of Western medicine might have been counted upon the fingers; to-day there are between five and six thousand native physicians practicing, to the best of their ability and opportunities, scientific medicine and surgery. Among these there is no inconsiderable number of men thoroughly educated, either abroad or at the University of Tokio, and some the equal of any men of their age and experience elsewhere. To this, more than to the system of governmental inspection and control of prostitution, I ascribe the very decided abatement of syphilitic disease. As a word of warning to intending visitors to Japan—this for transmission to your friends or patients, men of our profession never exposing themselves—let me conclude by saying that, for reasons unnecessary to enter upon now, governmental control of the brothels is, in a prophylactic sense, no more, perhaps less, effective than in other regions where it has been tried. Clandestine prostitution, at least in the open ports, has increased *pari passu* with the stringency of discipline in the regular army of Venus, and there are few parts of the world more dangerous to the unsophisticated globe trotter than fascinating, childlike, beautiful, glorious *Dai Nippon.*

TWO CASES OF
RAPIDLY PROGRESSIVE GANGRENE
IN WHICH PURE CULTURES OF THE *BACILLUS PYOCYANEUS* WERE FOUND.

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Case I.—J. B., aged thirty-one years, fishmonger. On November 18, 1892, I was requested by Dr. Curran to visit this patient in consultation. The following history was obtained: Two days previously, while cleaning fish, he received a wound from a fin upon the palmar surface of the distal phalanx of the left middle finger. The wound was a trifling one and attracted but slight attention at the time. Within a few hours, however, the finger became extremely painful and greatly swollen. The entire finger assumed a purplish-blue appearance, and several blebs filled with dark serum appeared upon the dorsal surface. When seen by me the local infection extended to the metacarpal region, and the finger itself was in a condition of gangrene from an overwhelmingly rapid infiltration of all its soft structures.

The patient's condition indicated a more than usually severe general infection. The pulse was 130 and the temperature 103° F. The countenance was anxious, the skin bathed in a moist, profuse perspiration, and in his general demeanor there were the evidences of a profound disturbance of the nervous system, as shown by a general uneasiness, anxiety of countenance, and sleeplessness. The usual accompanying symptoms of the febrile state—namely, anorexia and furred tongue—were present.

Immediate operative interference, for the purpose of getting rid of the local source of infection, was advised and accepted, and he was removed to St. Mary's Hospital for that purpose. On the afternoon of the same day I amputated the finger, and removed at the same time the greater portion of the corresponding metacarpal bone and dissected freely away the gangrenous tissues upon the back of the hand.

Within a few hours the patient's temperature fell to normal, the pulse-rate lessened, and a general improvement followed. The wound, which had been dressed with moist compresses of Laplace's solution (mercuric chloride, 1 to 1,000; tartaric acid, 5 to 1,000), became and remained aseptic and rapidly healed by granulation.

Stab cultures of sterilized gelatin culture tubes were made of the contents of the blebs, and from the tissues of the finger, from which Dr. Bristow obtained, at the Hoagland Laboratory, pure cultures of the *Bacillus pyocyaneus* (Gessard).

Case II.—I. N., aged thirty-five years, was admitted to St. Mary's Hospital on January 5, 1892, suffering from an exceptionally severe attack of appendicitis. He had been attacked upon the preceding day with symptoms which indicated a more than usually severe and rapid form of the disease, as shown by the intensity of the local tenderness, as well as by the profound prostration and other grave constitutional symptoms. The abdomen was at once opened by a right lateral laparotomy. The appendix was found to be gangrenous from the tip to within a quarter of an inch of its base. It lay buried in a layer of plastic lymph, which, fortunately, had shut it off from the general cavity of the peritonæum. This layer of plastic lymph was of the same greenish black color as the appendix itself. Considerable difficulty was experienced in isolating and removing the appendix without disturbing the slightly adherent and thin layer of isolating new-formation tissue. In this, however, I was finally successful. The cavity from which the organ was removed was carefully tamponed with sterilized zinc-oxide gauze, and the abdominal wound dressed with compresses of the same. All went well with the patient at first. The temperature and pulse-rate showed a decided tendency toward the normal from the first hour. The wound, as is my custom, was not disturbed for the first forty-eight hours. At the end of this time it was discovered that the patient's condition had changed for the worse. The temperature became elevated and the pulse quickened; some uneasiness on the part of the patient was also present. Upon removing the dressings, it was discovered that a gangrenous condition of the abdominal walls existed, extending from the inner margin of the wound toward the median line, occupying an area of about four inches. Numerous blebs were present, filled with dark-brown serum. The gangrenous portion was removed down to the muscular structure, which up to this time had escaped.

The parts were thoroughly cleansed by means of the acid-sublimate solution, and both the cavity from which the appendix was removed as well as the infected abdominal wall were dressed with moist dressings of the same. These were frequently changed. The wound soon assumed a healthy appearance, the pulse and temperature fell rapidly to the normal, and the patient eventually made a complete and satisfactory recovery.

Stab inoculations in culture tubes of sterilized gelatin, derived both from the contents of the blebs and from the gangrenous tissue, were made and investigated, with the result of showing the presence of the *Bacillus pyocyaneus*. No other micro-organism was found.

The special interest to be attached to these cases depends upon the bacteriological findings, taken in connection with the clinical conditions present. In both the same phenomena of sudden and rapid supervention of grave constitutional symptoms, in conjunction with a rapidly progressive gangrenous local condition, marked the course of the case. In both the same rapid improvement followed removal of the gangrenous area and vigorous antibacterial local treatment. Finally, in both the same micro-organism, and that of the class to which but slight pathogenetic importance is usually attached, was found in pure culture.

The question of the pathogenetic importance of this bacillus is of considerable interest at the present time. Former observers have considered its presence of but slight moment, producing no injurious effect; on the contrary, some have considered the occurrence of bluish-green pus as a favorable omen, inasmuch as gangrene and septic complications were usually not observed in connection with green suppuration. Since the days when "good and laudable" pus was considered a good omen in the course of the healing process, green or blue pus has lost its fascination for the surgeon, particularly since recent experiments (Ledderhose, Bouchard) have shown, as already stated, that, in animals destitute of immunity (guinea-pigs and rabbits), subcutaneous or intraperitoneal injections of recent cultures in bouillon caused the death of the animal in from twelve to thirty-six hours. In the case of the subcutaneous connective tissue an extensive inflammatory œdema and purulent infiltration of the tissue spaces, and in the case of the intraperitoneal injections a sero-fibrinous or purulent peritonitis, is induced. The cultures can be recovered from the serum or purulent fluid in both localities, as well as from the blood and the various organs. These results follow the introduction of one cubic centimetre or more of the bouillon culture. The introduction of smaller quantities may only be followed by local disturbances (abscesses), but thereafter the animal becomes immune against the usual toxic dose for animals of its class. Immunity may also be brought about by the introduction of the toxic products of the bacillus in bouillon, the latter being sterilized.

An antagonism between this micro organism and the bacillus of anthrax has been supposed to exist from the fact that animals inoculated with the latter are found to recover after inoculation with a pure culture of the *Bacillus pyocyaneus* (Bouchard, Charrin, and Guignard). This is probably due to the antidotal effects of the chemical products resulting from the proliferation of the bacillus (Woodhead and Wood), as shown by the fact that the same effect was produced if a sterilized culture of the saprophyte is introduced following the anthrax infection.*

Injections of cultures of Gessard's bacillus into the veins of animals produced the most pronounced toxic symptoms. From forty-five to sixty cubic centimetres of a culture, from two to three days old, introduced into the jugular vein of a dog produced death of the latter with characteristic symptoms, consisting of high fever, vomiting, and dejections of bloody fluid. Upon the death of the animal, section disclosed extensive hæmorrhagic and inflammatory conditions of the intestinal tract, together with subendocardial blood extravasations (Bergmann). Intravenous injections into the auricular veins of rabbits invariably produced death, even in relatively small doses (Charrin). Doses insufficient in amount to produce death usually induced paralysis in the posterior extremities, and albuminuria, the result of renal changes. In lethal cases a more acute course followed, characterized by fever, diarrhœa, and albuminuria. Intravenous injections are most pronounced in their effects; next comes subcutaneous and intraperitoneal inoculations. Exposure of the air-passages and of the intact gastro-intestinal mucous membrane to the action of the bacillus gave negative results.

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* Sternberg. *Manual of Bacteriology.*

Varying degrees of immunity and susceptibility are observed in different animals and in individual specimens of the same animal. For instance, some rabbits will rapidly perish from the usual toxic dose, while others remain alive after a much larger dose. Still others appear unaffected at first, but die after weeks or months of apparent health.

The later experiments of Bergmann would seem to show that neither progressive phlegmon nor sepsis occur with minimal doses of the culture of the *Bacillus pyocyaneus*. Even the most virulent cultures applied to open wounds have apparently but little effect. The effect in larger quantities, however, seems to be in direct proportion to the dosage. Even with larger doses of the bouillon cultures injected subcutaneously, while local abscesses and general toxic effects manifest themselves, the occurrence of progressive suppurative processes or of pyæmic metastases to remotely placed articulations, or to the internal organs, are not observed. In the cases in which abscesses are produced by subcutaneous injection of the bacillus the latter can be identified in the pus for a considerable time afterward and cultures made therefrom. The micro-organism, however, can not be identified in the surrounding tissues, nor does it appear to enter the circulation of the blood. When intravenous injections are employed, however, particularly in conjunction with an emulsion of sterilized lard, suppurative infarction in the lungs takes place. In addition to this, larger injections into the jugular veins of rabbits are followed, even in those instances in which rapid death occurs by the presence of the micro organism in all of the internal organs and in the blood as well. If, however, injections which are insufficient to produce death are given in a number of animals, and these killed at varying periods of time, it will be found that the bacillus will disappear, first from the arterial circulation, next from the lung tissue, following this from the liver and spleen, and last of all from the kidneys. They are found in large numbers in the urine and bile, thus suggesting that the liver and kidneys act as eliminators of the bacilli. This progressive elimination of the micro organism would seem to prove that no proliferation, but rather a decrease in the number of the bacilli, takes place. This occurs partly by destruction in the fluids of the body and partly by elimination through the organs above mentioned.

It would therefore appear that the picture presented of the behavior of animals under the influence of this saprophyte suggests rather an intoxication, either local or general, than symptoms resulting from an area mycosis. The fact that the effect is increased or diminished in proportion to the dosage, and the absence of advancing symptoms as well as evidences of proliferation of the bacillus in the tissues, recall the influence of irritating chemical agents upon the animal rather than the gradually progressive processes of disease based upon the advance of bacteria. This is further increased by the fact that the toxic products of the disease in bouillon cultures of the bacillus are not destroyed, although somewhat diminished by repeated attempts at sterilizing by heat at the boiling point. The removal of all corpuscular elements by filtration is equally inefficient with heat in eliminating the poisonous bacterial proteines, as Binhuer calls the albuminous portions of the bacterial cells which this observer located in the latter, and upon which the effects of the bacillus, notably the high temperature and inflammation, depend. It seems to be definitely settled that the toxic properties do not reside in the pyocyanin or the pigments generally, for the reason that even in large doses these are quite harmless. On the other hand, the bacterial proteins—which are obtained by scraping cultures grown upon a solid pabulum, such as potatoes, and dissolving these in weak alkaline solutions—are capable of producing the symptoms, even after heat sterilization and filtration, usually attributed to the presence of the bacillus in living cultures.

The fact should not be lost sight of, in considering the question of the toxic influence of cultures derived from the *Bacillus pyocyaneus*, that these are not conditions specifically related to or characteristic of this micro-organism. These symptoms of local irritation and general intoxication are common effects of bacterial infection from many sources.

There are numerous recorded observations of the presence of the *Bacillus pyocyaneus* under circumstances which would seem to suggest, with some degree of plausibility at least, that this micro-organism bore some ætiological relation to the conditions present. Thus it has been found in the pus from a suppurating otitis media (Gruber). It has been observed in septic peritonitis together with the *Bacillus communis* and other micro-organisms. It was found post-mortem in the hepatized lung of a child an hour and a half after death in conjunction with the *Proteus vulgaris* (Neumann). In a case which simulated typhus an eruption of bullæ occurred in the inguinal region in the third week. The blebs filled with a bluish serum, from which pure cultures of the *Bacillus pyocyaneus* were obtained (Oettinger). A rather interesting observation is made by Ehlers: Two children fell sick with diarrhœa, fever, albuminuria, and symptoms suggestive of typhus or cerebro-spinal meningitis. In one case an eruption of blebs occurred on the twelfth day, the contents of which were bluish in color. Pure cultures of the *Bacillus pyocyaneus* were obtained from these. In the other case pure cultures of the same organism were obtained from the blood post-mortem. While at first sight some of these cases seem striking, yet it must be admitted that they are scarcely convincing. The ætiological relations between the bacillus found and the conditions present in any given case is always a difficult matter to establish. For instance, the natural habitat of the bacillus has been shown to be the skin of the patient himself.* Green suppuration occurs with especial frequency about the axillary cavity, the gluteal furrow, and the inguinal fold (Muchsam). Eberth's researches have shown that the greenish-blue color imparted to the underclothing of some individuals depends upon the proliferation of this bacillus. It is a matter of common observation that the portions of the garments which come in contact with these localities are the site of these discolorations. This would explain the occurrence of the organism in the blebs in the inguinal region in Oettinger's case, in those following burns, and, in fact, in all the cases in which it has been found upon the integumentary surface. The fact that this organism is found in pure culture does not necessarily prove in any case that it was the true pathogenetic agent, for the latter may have easily escaped detection because of errors of inoculation, the absence of a proper culture media, etc. Gruber's observation is likewise open to criticism, for the tenacity of the *Bacillus pyocyaneus* when suspended in pus is well known, while the readiness with which certain other bacteria are inhibited in their growth or destroyed altogether by the presence of phagocytes should be borne in mind.

In considering the cases in which certain phenomena of a general character are recorded as having occurred in connection with the organism under consideration, several facts should be borne in mind. First the frequent occurrence of the bacillus upon the skin and presence of blue or green pus under circumstances of entirely undisturbed general health of the individual. Of the large number of cases of blue or green suppuration seen at the various clinics in the course of a year, I have yet to hear of a well-authenticated instance in which the nervous and febrile phenomena observed in both of the cases here recorded occurred. As to the discovery of the bacillus in the blood and internal organs post-mortem, this may be explained by the facility and rapidity with which saprophytic bacteria of both the skin and intestinal canal invade the tissues after death.

While, therefore, it is comparatively easy to account for the presence of the *Bacillus pyocyaneus* in the pus of middle-ear disease, in the blebs or blisters the result of burns, as well as those which occur as exanthemata, and in the blood and internal organs of those dying from symptoms resembling typhus and cerebro-spinal meningitis, and from which presence a pathogenic significance has been drawn, in all probability without due weight being given to all of the factors entering into the cases as they occurred, and the observations as they were made, it is difficult to explain the presence of the micro-organism in pure culture in the tissues of living patients, as occurred in the cases the histories of which have been given, without attributing to them a pathogenetic significance.

The possibility of some other micro-organism being mistaken for the one under discussion is, of course, always among the possibilities. Or, like the *Bacillus coli communis*, it may be that under certain circumstances the *Bacillus pyocyaneus* may assume pathogenetic properties in man not usually attributed to it.

In this connection the observations of H. C. Ernst are of interest. This writer discovered a bacillus in the fluid taken from a case of pericarditis which resembled that of blue or green pus in some respects, but which differed from the latter, as claimed by Ernst, in several important particulars. He claims that the micro-organism, which he identified and which he has called the *Bacillus pyocyaneus pericarditidis*, is a distinct variety of the bacillus of Gessard, and that therefore the assertion of the latter that there is but one blue-pus bacillus is unfounded.* The pathogenesis of H. C. Ernst's bacillus appears to be essentially the same as that usually attributed to the bacillus of Gessard, save that a somewhat smaller dose suffices to produce the effect.

To sum up, therefore, it may be stated: 1. That the destructive and profoundly toxic effects which characterize the presence of the *Bacillus pyocyaneus* in the lower animals have not heretofore been observed to occur in man. 2. That where its presence has been discovered in connection with pathological conditions the pathogenetic significance of the organism has not been established, for the reason that heretofore there has not been placed upon record a single well-authenticated case in which the *Bacillus pyocyaneus* was present in pure culture in the living tissues of the patients. Its presence in the blebs of Oettinger's case of typhus offers no more significance than is offered in those cases in which it is found in the blebs following burns. 3. The utmost that any of the observers who have studied this organism have yet claimed is that it delays the healing process, particularly the formation of new integumentary covering to the granulations, and produces a slow, chronic, but not intense toxæmia.†

Viewed from this standpoint, the observations herewith recorded may be looked upon as somewhat unique, suggesting, at least, that although this organism has no special tendency to invade the living tissues, yet that, under certain yet unexplained conditions of growth or environment, they may become thus migratory and give rise, unless promptly followed up, to the most disastrous consequences. Or a bacillus similar to that of Gessard, as well as that claimed by H. C. Ernst, not distinguishable by means now at our command from that of green or blue pus, but possessing a pathogenic importance not attributable to the latter, may have been the noxious and infective agent at work in these cases.

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* The origin of the bacillus of green or blue pus has recently become a subject of considerable interest to the surgeon. De Symmes investigated the condition of the atmospheric air in the operating room of Bergmann's clinic, and in several hundred plates and more than four thousand varieties of micro-organisms this bacillus was identified in but one instance. And this occurred at a time when a large number of cases of green suppuration were being dressed in the clinic. The constant employment of dressing materials made rigidly aseptic by exposure to heat above the thermal death point of the bacillus renders it very improbable that they convey the germ, since it is found to occur when such dressings are employed.

* Ernst. Bacillus Pyocyaneus Pericarditidis. *American Journal of the Medical Sciences*, October, 1893.

† Schimmelbusch. *Sammlung klinischer Vorträge*, No. 62.

The truth of the matter will probably be found in the statement that the world is but upon the threshold of bacteriological science, and that most remarkable revelations are yet to come. The cases herewith presented are offered with the hope of stimulating research and possibly identifying a special organism bearing an ætiological relation to cases of rapidly progressive gangrene.

A CASE OF
INTRA-ABDOMINAL SARCOMA.*

By CHARLES PHELPS, M. D.

I present a specimen of tumor which I removed two weeks ago, and which was situated partly within and partly without the peritoneal cavity. A pelvic origin was excluded by gynæcological examination, but its exact location and character occasioned some differences of opinion.

The patient, a woman aged forty-two years, has had no serious illness at any time, and, with perhaps the exception of a single incident, her history affords no suggestion of the existence or development of the disease from which she suffered. Eighteen years ago she was startled by the sudden appearance of a tumor in the left abdominal region, followed by local pain and by vomiting after the ingestion of food. After three months this tumor disappeared. In October last she discovered the present tumor in the median abdominal line. Its advent was as sudden and unexpected as that of its predecessor, and occurred to her while she was standing at the washtub. She was admitted into St. Vincent's Hospital three weeks later. It was firm, irregular in outline, hard, and freely movable. At one point, to the right of the median line, it was adherent to the superficial tissues, and the skin was beginning to inflame. It was not tender, but occasioned pain when she moved about. She was able to retain only fluid food, and movements from the bowels were natural.

An operation was done on November 21st, four weeks after the patient's discovery of the tumor. It was found, on incision through the median line, that the growth was in greater part intraperitoneal, but involved the abdominal wall from within as far as the deep surface of the superficial fascia. The anterior portion was first removed as a flattened mass from the rectus sheath. The muscular planes were then pushed aside and the remaining portion was circumscribed by an incision through the peritonæum, after the rectus muscle and sheath had been cut through above and below. The omentum, which with the peritonæum was incorporated with the tumor, was cut on either side, adhesions to the transverse colon and small intestine were separated, and the entire mass, including implicated mesenteric glands, was enucleated from the mesentery. No portion was left behind. This necessitated a loss of peritonæum of about six by four inches. The wound was closed without difficulty, except that in its center the peritoneal edges could not be brought in contact. Recovery has been somewhat retarded by the formation of parietal abscesses, but has been otherwise uneventful.

Subsequent microscopic examination of a portion of the tumor situated immediately behind the rectus sheath determined it to be in part a mixed-cell sarcoma and in part a fibro-sarcoma.

It seems probable that its origin was intraperitoneal, from the fact that its larger portion occupied that position, as well as from the further fact that the rectus sheath and muscle, though more or less infiltrated, had everywhere retained their general integrity of outline, which was hardly to be expected if they had constituted the elder site of disease.

It is at least possible that the tumor which so suddenly appeared and so rapidly disappeared eighteen years previously may have been only the beginning of this one which became evident in October last. This supposition is to some extent strengthened by the fact that this tumor, like the first, was developed from the left side. If such a lengthened period of quiescence is not to be assumed in the growth of a sarcoma, it is quite credible that a simple adenoid phlegmasia in the mesentery may have temporarily become prominent only to quickly subside, and at an indefinitely later period terminate in sarcomatous connective-tissue degeneration. Such a history would be not only of great interest in itself, but corroborative of our present belief in the necessity for the earliest practicable removal of all analogous as well as heterologous deposits. This is, however, only a speculative suggestion, as incapable of proof as of refutation.

A CASE OF
BILATERAL OVARIAN FIBRO-SARCOMA.*

By FREDERICK H. WIGGIN, M. D.

The comparative rarity of ovarian fibro-sarcoma (Schröder finding but ten out of six hundred, and Olshausen twelve out of two hundred and ninety-three ovarian growths) makes the specimens to which I desire to call your attention of interest.

On November 5th I was asked to see Mrs. J. R., forty-five years of age, whose history was as follows: She began to menstruate at ten years of age; it was painless and regular, of the monthly type. It diminished in quantity slightly before it ceased entirely last January. She has had three children, all of whom are alive, the youngest being twenty-one years of age. She has had two miscarriages—one sixteen years ago, the last three years ago.

Previous History.—Her health has always been good. Her present illness commenced with the cessation of menstruation last January. At that time she felt a fullness in her abdomen, and by that her attention was called to a tumor low down in the abdomen, of about the size of a hen's egg. This tumor has increased in size regularly, and of late rapidly. Four months ago she noticed the second tumor, which also increased in size gradually till within a short time. During the last few weeks she has lost flesh and strength rapidly, the urine has been scanty, and breathing has begun to be affected.

Physical Examination.—The patient is extremely emaciated; her breathing is short and shallow; her abdomen is enormously distended. Palpation reveals marked ascites. The lower part of her abdomen, as high as the umbilicus, is filled by a nodular tumor, divided into two parts by a deep sulcus. Vaginal examination reveals a hard, nodular tumor completely filling the pelvic roof; the cervix and uterine cavity are normal; the uterus is anteverted and crowded over to the left side. An operation was advised, and performed with the assistance of Dr. W. S. McLaren, of Litchfield, Conn., and Dr. Karrman, of North Woodbury, Conn. On opening the abdomen, a large amount of fluid escaped; the tumors immediately presented, and were found to be free from adhesions. They were removed without difficulty. The patient made a good recovery, her temperature and pulse becoming normal within forty-eight hours.

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* Read before the Society of the Alumni of Bellevue Hospital, December 6, 1893.

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I am indebted for the microscopical examination and report to Dr. E. K. Dunham, of the Carnegie Laboratory.

55 West Thirty-sixth Street.

SOME INTERESTING AND CURIOUS INCIDENTS IN THE
HISTORY OF ANAL FISTULA,
INCLUDING IN IT THE ACCOUNT OF A FEW CELEBRATED PERSONS WHO WERE THE SUBJECTS OF IT.

By WILLIAM BODENHAMER, M. D., LL. D.

The attention of the writer was called to this particular subject by reading an article in a late number of the New York *Medical Record*, copied from the *Medical Press*, upon the subject of the treatment of the Grand Monarque Louis XIV of France for an anal fistula, etc. The first sentence of the article alluded to is as follows: "It is not, perhaps, very extensively known that Louis XIV, of France, was one of the first to undergo the ordinary operation for rectal fistula—that is, of slitting up the fistulous tract with a bistoury."

The writer consequently, from these data, concluded to enlarge the subject somewhat, taking it for granted that it would not be distasteful to the profession, but would be both interesting and agreeable to medical readers generally to hear more of the history, both ancient and modern, of this very remarkable disease denominated fistula in ano—a disease, too, which claims so high a rate of antiquity. But before presenting the incidents mentioned the writer will, by way of introduction and for the better understanding of the subject, make some remarks upon the theory and the practice of the ancients and the moderns in relation to this very ancient disease.

It may here be observed as a singular fact that, by reading what has been written upon the subject of anal fistula by a few physicians and historians of the fifteenth, sixteenth, and seventeenth centuries, it would naturally be taken for granted that this affection, like leprosy, had always been considered incurable, and that the victims of it, for this and other reasons, had concealed their irremediable malady.

The celebrated John Astruct, in his Latin dissertation on fistula in ano, relates an interesting incident in relation to this disease. He says that for an age previous to 1687, the year in which Louis XIV was operated on, the fistula of the anus had almost sunk into oblivion, and was scarcely ever seen or heard of by physicians; not that the disease did not exist, but in consequence of a false delicacy in those who had it in not making it known; despairing of any remedy, they preferred to conceal a disease which at that time was considered incurable. (*Dissertatio de Fistula Ani*, 12mo, Monspelii, 1718.)

But why anal fistula should have been considered incurable at the particular time mentioned is strange indeed, especially when we take into consideration the fact that no surgeons or physicians of any eminence, either ancient or modern, considered it incurable, but, on the contrary, declare that it always was amenable to proper treatment; indeed, there never was a time in the estimation of any intelligent and reputable surgeons of any period that anal fistula could not be cured unless it was complicated with some incurable disease. The question then may here be asked, Why did the subjects of this disease conceal it? Was it from a positive belief that it indeed was incurable? or was it simply from a false modesty to reveal it to the surgeon for treatment and cure? It can scarcely be imagined, however, that a false delicacy could be carried so far as to prevent the patient from making application at once to the proper source for the relief of a more or less serious and always a most disagreeable disease, to which no reproach whatever could be attached. In close connection with this subject it may be proper just here to remark that all of the authors, not medical, cited in this article, when writing on anal fistula, omit the word *anal*, *anus*, or *fundament*, through delicacy, because either one of these terms, when used with the word *fistula*, at once locates the disease upon one of the so-called secret parts. The word *fistula* alone signifies a pipe or tube, but when used to represent a disease it means a pipelike sore—hence an anal fistula is a pipelike sore of the anus.

But, doubtless, a very considerable cause of the concealment of this disease by those patients was owing to the formidableness, the severity, and the danger attending some of the measures or methods of treating this disease, as devised and practiced at that period by some ignorant pretenders, that deterred the subjects of it from submitting to it; consequently those patients suffering from this affection might rather conceal and endure it than to submit to such treatment, especially as fear and pain could not then be annihilated as they now can by means of the sublime blessings of anæsthetics.

But during this very period the following able and distinguished modern surgeons and authors flourished, and their works were broadcast. They all declared that anal fistula was curable by either the knife or the ligature, and they proved it not only by words but by deeds also. In France was the celebrated surgeon Ambroise Paré, whose works were published in French, in Latin, and in English, and were widespread. (*Œuvres*, liv. ii, chap. xxiii, folio, Lyon, 1641.)

M. Lemonnier was also a surgeon and author of France. (*Traité de la fistule de l'anus*, 12mo, Paris, 1641.)

Richard Wiseman, the celebrated English surgeon and author. (*Seven Chirurgical Treatises*, book iii, chap. v, p. 220, folio, London, 1796.)

Daniel Sennertus, another able author. (*Praxis medica*, lib. v, cap. x, folio, Lugduni, 1650.)

The writer, for want of time and space, must omit giving the lengthened history of the celebrated Englishman John de Arderne, of the sixteenth century, who was distinguished for the successful treatment of anal fistula. (*A Treatise on the Fistula in the Fundament.* Translated from the Latin manuscript of John de Arderne, in the British Museum. By John Read, Esq., 8vo, London, 1588.)

And last, but not least, may be named among modern surgeons of this period Peter de Marchetti, the able and distinguished Italian professor of surgery and anatomy in the then celebrated university at Padua, who remarked before his death that he could affirm without vanity that he had successfully treated more than six hundred cases of fistula of the anus by the knife operation, sometimes combined with the actual or the potential cautery. (*Observationum medico-chirurgicarum rariorum sylloge*, cap. lxi, 4to, Amstelœdami, 1665.)

So much for the able modern surgeons named, who with their works flourished about the time of Louis XIV, but who seemed at that particular time to have been forgotten or ignored.

And furthermore, from all the various data previously given, it would indeed seem to appear that prior to the close of the seventeenth century anal fistula had never been successfully treated, if treated at all, but seemed to have been lost sight of, forgotten, or ignored; and that the knowledge and the labors of the ancients regarding the pathogeny, the pathology, and the treatment of this disease had also shared the same fate; or that they had slept during the many dark centuries which intervened until, like magic, as it were, they were suddenly awakened, resurrected, and revivified from this state of oblivion and obscurity by the lucky surgeon M. Felix de Tassy, which the very opportune, the happy, and the fortuitous case of Louis XIV so amply afforded him. It will be perceived, however, that this surgeon did not in any particular whatever originate either the indication, the measures, or the *modus operandi* which he adopted in the treatment of the king's case, as some have intimated and would have us believe, but only revived at that particular time and place the ancient practice of completely dividing the fistulous passages by either the bistoury or the ligature.

But the ancients, whom the moderns of that period seemed to have lost sight of in the preceding dark ages, were not ignorant of this affection, as will now be briefly shown by giving some of the ancient treatment of anal fistula as practiced by a few of the most celebrated surgeons and physicians of antiquity, comparing it with that of the then moderns, and also with that of our own time.

Hippocrates, in the treatment of anal fistula, employed either the knife or the *apolinose* (ligature), according to the nature of the case. He plainly describes the method by *apolinose* and the manner of introducing it into the fistulous tracts. The ancient ligature used for this purpose was composed of hemp or flaxen thread, two or three double, to which were sometimes added a few horsehairs, which would not decay. Now, the principal indication which Hippocrates had in view in the treatment of this disease was to completely divide the fistulous sinuses either instantly with the knife or slowly by the ligature; and in order to prevent the knife-incised parts from uniting or healing too soon, he used several kinds of caustics, whereas we of the present day, for the same and a better purpose, press pledgets of soft lint into the cavity so that the granulation and healing must take place at the bottom. (*De fistulis liber.*)

Galen, with the same indication in view as that of Hippocrates, treats this disease by incising the fistulous tracts with the syringotome. (*Galeni Methodi medendi*, lib. vi, cap. iv.)

Celsus, of all the ancients, understood more, perhaps, than any other the true nature or pathogeny and treatment of anal fistula. He used either the knife or the ligature, and advises that after the knife operation the lips of the incision should be secured by clamps or the edges of the wound should be united by sutures. He also sometimes adopted the method of the complete extirpation of the diseased or indurated parts by dissecting out the whole parietes of the fistulous passages.

Celsus also minutely describes the method by ligature, and says that it is slow, yet free from pain; he, however, only proposes the ligature for blind external fistulæ. The following are his directions for the introduction and the management of the ligature in such peculiar cases. He says: "The specillum (probe) being introduced into the fistula, an incision should be made through the skin on the extremity of it; then from this new aperture the probe should be drawn out with the ligature attached to its distal end, perforated for that purpose; then the ligature should be seized and its two ends tied, so that the skin over the fistula may not be too tensely held; the thread should be double or triple, and so twisted that it may form one ligature. In the meantime the patient may attend to his ordinary business; he may walk, bathe, and take his food as if nothing were the matter." (*De medicina*, lib. vii, cap. iv.)

Albucasis approved of either the knife or the ligature in the treatment of anal fistula. (*De chirurgia*, lib. ii, cap. lxxx, folio, Argentorati, 1532.)

Avicenna employed the ligature for the treatment of anal fistula, and preferred for this purpose the twisted hairs of some animals, as they were not subject to decay. (*Canonis medicinæ*, lib. iii, cap. xvii, folio, Lovanii, 1658.) This was a wise choice of Avicenna's, so far as the durability of the ligature was concerned, but hair as a ligature has other valuable qualities—it is aseptic, it does not absorb, and it is less irritating. Hence it is far superior as a ligature to either hemp, flax, or silk.

The writer will now give some of the empirical treatment of anal fistula. It must first, however, be observed that the indurations and callosities consequent upon chronic inflammation, by which fistulous passages and abscesses are usually surrounded, were anciently considered malignant alterations of structure, and that they absolutely required a complete removal before a cure could be effected. These erroneous opinions led to the adoption of some of the most violent and barbarous methods, such as the complete extirpation of all the diseased or callous parts by the knife, or a destruction of them by the actual or the potential cautery, or a combination of all these means. Upon this same subject the able English surgeon, Mr. Pott, when speaking of the ignorance of some of the early modern surgeons, says: "Imagining this callosity to be a diseased alteration made in the very structure of the parts, had no conception that it could be cured by any means but by removal by cutting instruments or by destruction with escharotics, and therefore they immediately attacked it with the knife or caustic in order to accomplish one of these ends; and very terrible work, by their own accounts, they often made before they did accomplish it." (*Chirurgical Works*, edited by Sir James Earle, vol. ii, p. 203, 8vo, Philadelphia, 1818.)

It was this false notion that led Albucasis, Jean de Vigo, Durand, Sacchi, and Severinus to apply the red-hot iron to the parts after they had previously been laid open with the knife. It was this same error that induced Guido Cauliaco to make his incisions with a red-hot bistoury introduced on a grooved director. And it was the same erroneous opinion which caused Leonidas to carefully remove all the callosities by means of a forceps, a knife, and a peculiar speculum.

Turundæ, or tents, were also used in treating anal fistula; they were made of different materials, corresponding in size to that of the fistulous passages. These tents were then charged or imbued with various caustics and pushed into the sinuses, and their size daily increased until the passages were entirely destroyed.

Fabricius, *ab Aquapendente*, recommends the tent method of treating anal fistula. He also uses the ligature in the same disease, and says: "We, to draw the ligature the tighter, put in a little turn stick, about the middle of the ligature, and, by turning this about, the ligature becomes twisted up extremely tight. (*De fistula ani*, 12mo, Lugduni, 1592.)

M. Dionis, in his surgical work, speaks of a noted quack who treated anal fistula by tents. He says: "There lived in Paris in 1700 one Le Moyne, who acquired a great reputation for the cure of anal fistula. His method consisted in the use of caustics—that is to say, with a corrosive unguent, with which he covered a small tent which he thrust into the sinus, by which he daily, little by little, consumed the circumference, taking care to enlarge the tent daily, so that by the widening of the fistula he discovered its bottom. If he found there any callosity, he corroded it with his ointment, which also served to destroy the *coney burrows* (sinuses), and at last, with patience, he cured many. This man died old and rich, by reason he made his patients pay very well for their cure, in which he was in the right, for they value things no otherwise than in proportion to the sum which they cost. Those who were affrighted at the thoughts of the knife and the scissors threw themselves into his hands, and though the number of rascally pretenders is very great, they never yet want practice." (*Cours d'opérations de chirurgie démonstrées au jardin du roi.* Par De la Faye. Tome i, p. 411, 8vo, Paris, 1782.)

Strong solutions of the various caustics were also used at this early period in the treatment of anal fistula. They were injected into the fistulous tracts for the purpose of destroying the induration or callosity.

The writer has now briefly shown that the ancients were not ignorant of the nature, cause, and treatment of anal fistula, but understood them well. They possessed all the indications in the treatment of this disease, as well as the numerous measures and methods of putting them into execution. They had incision and excision with the bistoury; they had the ligature; and they also had cauterization in all its many forms; indeed, we are indebted to them for almost all we know upon the subject of anal fistula. It may then be asked, What more is known of this disease at the present time, or what more is done to cure it than that which we find in the works of the ancients named? whose works, too, seem to be as durable as time is lasting. But, regarding other diseases even, as well as this, it may be truthfully answered that we of the present wonderful age of revolution and progress have many invaluable aids to surgery in the perfection of new and appropriate instruments and various valuable appliances, as well as entirely new methods of operating which the ancients had not, our armamentarium being much more complete and suitable; we also have the blessed annihilator of pain and antisepsis, the two most powerful agents which render such invaluable service to the success of surgery; indeed, they embolden and inspire with confidence the surgeon to attack viscera or parts which heretofore would have been shunned, or would have been attacked with the gravest apprehension. We also have many new and most valuable therapeutic remedies, and also many successful sanitary measures for the prevention of disease which the ancients had not.

It is said, by the by, that ancient surgery was without drainage and drainage-tubes, which are so essentially necessary in many surgical cases, they being the inventions of recent times. But it ought to be known that Hippocrates himself, twenty-three centuries ago, used and recommended drainage by the use of tubes in deep-seated mammary abscesses. (*Hippocratis opera omnia græcè et latinè, ab Anutio Foësio. De ratione victus in morbis acutis liber.* Lib. ii et lib. iii, tome i, pp. 461 et 487, folio, Genevæ, 1657.)

Now, from all that has been shown of the knowledge and the practice of the ancients with regard to anal fistula, the conclusion can readily be drawn that, with respect to their practice in some other diseases, they might be equally expert. We, however, are too apt, in this marvelous age of progress, to ignore the ancients and to claim for ourselves the whole merit of the present highly improved state of medical science, closing our eyes upon the fact that we still have much to learn in regard to real substantial and permanent principles, theory, and practice, to be entirely out of sight and out of mind of the ancients; indeed, we are not yet too many steps in advance of them—steps which they made many centuries before us, and made, too, under far less favorable and advantageous circumstances. Then let us not despise or undervalue in the least what has been done and written by the ancients upon the subject of anal fistula, as well as upon that of other diseases; neither should we ever forget or lose sight of those noble Greek, Roman, and Arabian physicians, the representatives of three of the most intellectual nations of mankind, who as pioneers first discovered the correct road and blazed it as they passed through the wilderness and subsequently made no inconsiderable improvement in it; hence no small degree of praise should be withheld from them.

Now, for instance, it is in this manner that one generation of medical men, in the active exercise of their faculties, acquires a certain amount of knowledge and skill; this is transmitted to the next generation, and it in turn adds its proportion and so on, each generation in its turn accepting knowledge of its progenitors and transmitting with its own acquisitions the sum total to its successors. To repeat, let us not then aid in destroying the stepping stones by which we of the present generation have attained the noble height we now occupy.

The writer, in concluding this part of the subject, will respectfully remark that fistula ani, when not connected with morbid conditions of the lungs, intestines, or other viscera, equally incurable and fatal, may be regarded as one of the most simple and most satisfactory subjects of surgical practice; indeed, there is no disease more amenable to the treatment of the present day than anal fistula, it deriving nearly all its difficulties and dangers from diseases that complicate or succeed it.

A Few Noted Subjects of Anal Fistula.—The earliest notable case of this disease on record, so far as known to the writer, is that of an eminent lawyer and a Christian named Innocent, who in 388 resided at Carthage, which was the then famous African city of antiquity. The original account of this unique case is given in full and vouched for by that able and devout prelate St. Augustine, who was also present and witnessed the event, the whole account of which he gives in his celebrated work, *De civ. Dei*, lib. xxii, cap. viii. The writer, however, being unable to find a copy of this work of St. Augustine, will give the account of the case as it is reported in the life of St. Augustine by the Rev. Alban Butler, D. D., which is as follows: "St. Augustine landed at Carthage about September in 388, and there lodged for some time in the house of a virtuous lawyer named Innocent, and was witness to his miraculous cure of a dangerous fistula, while the best surgeons of Carthage and Alexandria were preparing to form a dangerous incision, a sinus which was deeper than the rest of the sore having escaped several operations which he had already undergone. The patient prayed with many tears that God would mercifully preserve him from this danger. Saturninus, Bishop of Uzalis, Aurelius, who was afterward Bishop of Carthage, and several other pious clergymen, who often visited him during his illness, were themselves present, falling on their knees, joined him in his devout prayer. St. Augustine was also one of the company and relates how the surgeons, coming the next day, he that was to perform the operation took off the bandages and, to the astonishment of all who had seen the wound before, found it entirely healed and covered with a very firm scar" (*Lives of the Saints*, vol. viii, p. 517 *et seq.*, imp. 8vo, New York, 1864). Daniel Sennertus, in his Latin treatise on medicine, also very briefly alludes to this case, without, however, giving the name of the patient. He says: "There is extant in St. Augustine's work, *De civ. Dei*, the account of a most miraculous cure by devout prayers of a fistula in ano, which is well worth the reading" (*Praxis medica*, lib. v, cap. x, folio, Lugduni, 1650). M. Velpeau, in his great surgical treatise, also gives the account of this case, but says that the patient was Pope Innocent; but this is certainly an error of his and may have occurred from the similarity of names.

The Case of Henry V of England.—It is said that King Henry V died of an anal fistula on the 31st day of August, 1422, in the thirty-fourth year of his age and tenth of his reign. The great historian Hume, on this event, says: "But the glory of Henry, when it had nearly reached the summit, was stopped short by the hand of Nature, and all his mighty projects vanished into smoke. He was seized with a fistula, a malady which the surgeons at that time had not skill enough to cure; and he was at last sensible that his distemper was mortal and that his end was approaching. He sent for his brother, the Duke of Bedford, the Earl of Warwick, and a few noblemen more whom he had honored with his friendship, and he delivered to them, in great tranquillity, his last will with regard to the government of his kingdom and family." (*The History of England*, vol. i, chap. xix, p. 418, imp. 8vo, Philadelphia, 1841.)

The historian does not intimate whether either radical or palliative treatment had been employed in the case of the king, but says, plainly enough, that the surgeons of that period had not skill enough to cure an anal fistula, the disease of which the king died. This stigma upon the escutcheon of surgery at that time, if really and fairly deserved, plainly indicated that anal fistula then was the *opprobrium medicum.*

The French King's Case by Shakespeare.—Shakespeare has rendered anal fistula quite notorious by making it a very important feature in his play, *All's Well that Ends Well.* To what particular French king Shakespeare alludes must be largely left to conjecture, as he could not have had reference to the case of the Grand Monarque Louis XIV, who was treated in 1687 for the same disease. The play, however, is said to have been written in 1606, just eighty-one years previously, and Shakespeare died in 1616, ten years after. But the French king in the play may have been one of Shakespeare's fictitious characters, the sole invention of his extraordinarily fertile genius. It will be perceived that in this play the surgeons of the time, like in the case of Henry V, meet with a similar implied stigma, but they doubtless survived it.

A small part only of the prelude of the play is given:

All's Well that Ends Well.

Act 1. Scene 1.

Countess. What hope is there of his Majesty's amendment?

Lafeu. He hath abandoned his physicians, madam, under whose practices he has persecuted time with hope, and finds no other advantage in the process but only the losing of hope by time.

Countess. This young gentlewoman had a father (oh, that *had!* how sad a passage 'tis!) whose skill was almost as great as his honesty; had it stretched so far, would have made nature immortal, and death should have play for lack of work. Would for the king's sake he were living! I think it would be the death of the king's disease.

Lafeu. How called you the man you speak of, madam?

Countess. He was famous, sir, in his profession, and it was his great right to be so: Gerard de Narbon.

Lafeu. He was excellent, indeed, madam; the king very lately spoke of him admiringly and mourningly; he was skillful enough to have lived still, if knowledge could be set up against mortality.

Bertram. What is it, my good lord, the king languishes of?

Lafeu. A fistula, my lord.

Bertram. I heard not of it before.

Lafeu. I would it were not notorious. Was this gentlewoman the daughter of Gerard de Narbon?

Countess. His sole child, my lord; and bequeathed to my overlooking.

Case of the Grand Monarque Louis XIV.—This was a very remarkable case in several respects—not, however, that there was anything extraordinary either in the disease itself or in the treatment; these were all of the most simple character; but its remarkableness was doubtless owing to a general lack of information regarding the true nature and character of the disease, which was then looked upon as something entirely new and marvelous; to the emotional and impressive character of the people; and to the distinguished patient himself and his unwillingness to submit at once to proper and rational treatment, instead of spending precious time in having the numerous empirical remedies and methods tested upon others.

In confirmation of what has just been said, it may be proper to remark here, as a notorious fact, that after the king had been operated on many of his courtiers and others suddenly pretended to be afflicted with the same disease; indeed, it became the *bon ton*, and every one wanted to have the king's disease—*maladie du roi*—as it was then designated, and all insisted upon being operated on as the king had been.

M. Dionis alludes to the same subject. He says: "Fistula in ano seems more frequent now than formerly; we every day hear of operations performed on such persons as did not before seem afflicted with it. It is a disease grown into fashion since that which his Majesty Louis XIV had, and on which the surgeons were forced to perform the operation in order to its cure. Several of those who before that time carefully concealed their having it are now not ashamed to publish it, and some courtiers have even chosen Versailles for the place where they will undergo this operation, because the king would there be informed of all the circumstances of their indisposition. I have seen above thirty who desired to have the operation performed, and whose folly was so great that they seemed angry when they were assured that they did not at all need it." (*Op. cit.*, tome i, p. 406.)

There is a case parallel to the preceding, which is related by the elder Pliny, author of the *Natural History*, who says: "In the reign of Tiberius Cæsar the colic first showed itself; nor did one man in Rome ever complain of this disease till the emperor himself had been severely attacked with it." (*Natura historiarum*, lib. xxv, cap. i, folio, Hagæ, 1518.)

The celebrated Madame de Sévigné, in some of her letters written during the excitement consequent upon the king's disease, and the cure of it by M. Felix, says in one of her letters: "The king had been operated on for a fistula on the 18th of November, 1687, by M. Felix de Tassy, his first surgeon. The king supported the operation with the greatest courage." In another letter, dated Paris, January 15, 1688, she says: "We can not thank God enough for the perfect health of the king, now relieved from his disease. The public rejoicings which take place are a proof of the sincere grief which his illness had occasioned among his people." In another letter Madame de Sévigné writes to her daughter, Madame de Gregnan, in which she speaks of the king's surgeon, M. Felix. She says: "The Abbot Bigorre writes to me that M. de Niel fell the other day, while standing in the room of the king, and received a severe contusion. M. Felix, in bleeding him, cut an artery. The grand operation was instantly needed. What does M. de Gregnan think of it? For my part, I do not know who is the more to be pitied of both parties. Only think of a first surgeon to the king who cuts an artery!"

The history of the Grand Monarque's case before, at and after the operation will now be given as recorded in the excellent surgical treatise of M. Dionis, which is as follows: "In the year 1686 there arose near the king's anus a small tumor inclining toward the perinæum; it was neither inflamed nor very painful; it grew slowly, and after ripening, broke of itself, by reason that the king would not suffer M. Felix, his principal chirurgeon, to open it as he proposed. This small abscess was attended with the ordinary consequences of those not sufficiently opened to admit the application of remedies to the bottom of the cavity; there was only a small orifice through which the matter ran; it continued to suppurate, and at last became fistulous. The sole way left of curing it was by manual operation, but the great can not always be brought to yield to it. A thousand persons proposed remedies which they pretended to be infallible, and some of them, which were concluded to be the best, were tried, but none of them succeeded. His Majesty was told that the waters of Barège were excellent in those cases, and it was also reported that he would go to the waters, but before taking the journey he thought fit to try them on several patients; four persons were found who were afflicted with the same disease, and sent to Barège at the king's expense, under the direction of M. Gervais, chirurgeon in ordinary to his Majesty; he made the necessary injections of this water into their fistulæ for a considerable time, and used the proper means for their cure, and at last brought them back as far advanced toward that end as when they first went thither. A woman reported at court that, going to the waters of Bourbon, in order to be cured of a particular disease, she was by the use of them cured of a fistula, which she had before she went thither. One of the king's chirurgeons was sent to Bourbon with four other patients, who returned in the same condition they went.

"A Jacobin friar, applying to M. Louvoy, told him that he had a water with which he cured all fistulæ; another boasted of a never-failing ointment, and yet others proposed different remedies, alleging the cures which they pretended to have done. That minister, determining to neglect no means in order to the procuring a restoration of a health so important as that of the king, caused several chambers to be furnished, in which he placed persons afflicted with fistulæ, and caused them to be treated pursuant to the several methods of the boasting pretenders to cure them in the presence of M. Felix. A year was spent in these various essays, and not one patient cured. M. Bessière, who examined the indisposition, being asked his thoughts by the king, freely answered his Majesty that all the remedies in the world would prove vain without manual operation.

"At last the king, to whom M. Louvoy and M. Felix gave an account of what had passed, seeing no hopes of being cured otherwise than by operation, on which M. Felix continually insisted, determined for it; he delayed it till his return from Fontainebleau, and one morning had it performed when nothing of the nature was suspected by the courtiers, who, going to attend the king's levee, were informed that he had undergone the operation, and resolutely suffered all the incisions which M. Felix thought proper to be performed.

"This happened on the 18th of November, 1687. M. Felix, to whom the king had left the liberty of appointing what chirurgeons he pleased to assist him, chose M. Bessière, who was accordingly present at this operation, where besides were only M. Louvoy and the physicians, Dr. Daquin and Dr. Fagon. The cicatrizing was well managed, and the king perfectly cured. His Majesty royally recompensed all those who had rendered him service while under this indisposition; he gave to M. Felix fifty thousand crowns; M. Daquin, one hundred thousand livres; M. Fagon, twenty-four thousand livres; M. Bessière, forty thousand livres; and to each of his apothecaries, in number four, twelve thousand livres; and to one Raye, M Felix's apprentice, four hundred pistoles." (*Cours d'opérations de chirurgie demonstrées au jardin du roi.* Par De la Faye, tome i, p. 419, 8vo, Paris, 1782.)

Estimated Value of the Fees in United States Coin.

M. Felix received 50,000 crowns	$30,000
Dr. Daquin " 100,000 livres	20,000
Dr. Fagon " 24,000 "	5,000
M. Bessière " 40,000 "	7,500
Four apothecaries (each 12,000 livres, $2,500).	10,000
M. Raye (apprentice to M. Felix) 400 pistoles.	1,000
Total amount of fees	$73,500

The writer will now close the case of the Grand Monarque with the remark that he proved himself to have been both grand and royal by the gracious and the liberal manner he displayed in the remuneration of his faithful medical attendants. He will also further add in conclusion the remarks upon the same subject of a writer in a very old number of the London *Medico-chirurgical Review*, which are as follows: "These were royal days for surgeons. The fee which the operator on the Grand Monarque, M. Felix, pocketed was six thousand pounds. The name of this gentleman is emblematic of the palmy days of surgery in which he had the luck of flourishing. If an operator now receives a thousand pounds for giving sight to one of our millionaires he is thought a marvelously fortunate fellow."

184 CENTRAL AVENUE, NEW ROCHELLE, N. Y., *December 6, 1893.*

NOTES ON THE FREQUENCY OF THE BATTLEDORE PLACENTA.

By T. RIDGWAY BARKER, M. D.,
PHILADELPHIA.

WHILE placenta prævia and succenturiata are of vastly more importance, both physiologically and pathologically, than the variety I have chosen as the subject of this article, from the grave complications that are likely to arise in their management, yet a study of the battledore may not, perhaps, be wholly devoid of interest.

In many of the standard text-books of to-day little if anything is said on this subject, which would lead one to suppose it was therefore of very infrequent occurrence.

This, to judge from my experience, is quite incorrect, as the report of a series of eighty unselected cases met with in practice goes to prove.

Until quite recently I gave the subject but little consideration, simply examining the placenta after every confinement to see that it had come away *in toto* without paying any particular attention as to peculiarity of shape or size.

This will account for the comparatively small number of cases reported. Since adopting the plan of making full notes of cases of confinement I have met with a series of six cases which naturally aroused my interest and led me to investigate the subject.

The cause or causes which induce this peculiar form of placenta are but imperfectly understood. That the chorionic villi on one side of the decidua serotina have failed to undergo the usual development every one is prepared to admit. In this way we can readily account for the insertion of the umbilical cord out on the periphery; but when we ask ourselves what occasions this imperfect development the problem is not so easy of solution. The thought has suggested itself to me that perhaps the site selected by the allantois for the attachment and growth of this fœtal organ may have considerable to do with the shape which it ultimately assumes.

If the allantois should come in contact with the chorion at a point abnormally near one or other of the Falloppian tubes or in the neighborhood of the fundus of the uterus and the space prove insufficient for the development of a circular placenta, the villi would undergo atrophy as in other parts of the uterine cavity, and the placenta would be one-sided with the cord on the margin.

The law of accommodation would then operate and an increased growth occur in the opposite direction, thus giving rise to the typical battledore variety of placenta. This view, I am prepared to admit, is based on theory rather than experimental research, and hence further study will be necessary before we can arrive at any satisfactory conclusion, yet the facts would at least seem to bear out the theory. As to the frequency of this condition, my report shows that of eighty cases of confinement where delivery took place at full term the battledore placenta was present in thirty.

Age of mother.	Number of births.	Sex of infant.	Normal placenta.	Battle-dore placenta.	Age of mother.	Number of births.	Sex of infant.	Normal placenta.	Battle-dore placenta.
..	..	F.	..	B.	34	8	F.	N.	
43	9	F.	N.	..	25	4	F.	N.	
34	3	M.	N.		24	..	M. and F.	N.	
30	..	F.	N.		35	8	F.	..	B.
31	2	M.	N.		30	2	F.	N.	
30	1	M.	N.		29	1	F.	N.	
28	1	2 M.	2 N.		23	..	M.	N.	
28	3	M.	..	B.	24	..	F.	N.	
39	9	F.	N.		34	1	M.	N.	
29	2	M.	N.		28	4	F.	N.	
30	?	F.	..	B.	32	2	F.	N.	
21	2	M.	N.		31	1	M.	N.	
24	1	M.	N.		18	2	M.	..	B.
26	4	M.	N.		21	..	F.	..	B.
21	1	F.	N.		17	..	F.	N.	
21	..	M.	N.		21	1	F.	N.	
37	4	M. and F.	..	2 B.	21	2	F.	..	B.
27	..	M.	N.		21	..	F.	..	B.
30	4	M.	N.		32	5	F.	..	B.
37	5	F.	N.		15	..	M.	..	B.
43	3	M.	N.		30	2	M.	..	B.
35	7	M.	N.		38	5	F.	..	B.
30	7	M.	N.		29	..	M.	N.	
29	3	M.	N.		38	..	M.	..	B.
21	..	M.	N.		30	6	F.	N.	
..	2	F.	N.		24	1	M.	..	B.
32	9	F.	N.		18	..	F.	..	B.
20	..	M.	..	B.	28	4	M.	..	B.
33	4	F.	..	B.	32	5	M.	..	B.
23	2	M.	..	B.	28	3	F.	..	B.
38	7	F.	N.		18	1	F.	N.	
32	1	F.	N.		34	7	M.	N.	
25	2	F.	..	B.	22	..	F.	..	B.
36	11	M.	N.		28	..	M.	N.	
30	2	M.	N.		39	6	F.	N.	
38	10	M.	N.		35	5	M.	..	B.
37	9	F.	N.		27	2	M.	N.	
..	5	M	N.		19	..	M.	..	B.
37	11	F.	..	B.	21	1	F.	N.	
29	5	M.	..	B.	30	3	M.	..	B.

Of this number, nineteen were thirty years of age or under, while nine were under forty. The youngest female was fifteen years old, the oldest thirty-eight years. As to the number of births in each case presenting this peculiarity of afterbirth we find the following: There were nine primiparæ and twenty multiparæ. Of the latter group, seventeen had had from two to five children.

One had had eight and one eleven. In one instance of twins there were two placentæ, both battledore. By this comparison of groups and classes we notice that this freak of Nature, as it were, occurs in primiparæ as well as multiparæ. With regard to the relative frequency we can form no opinion, owing to the limited data.

Moreover, we learn that neither age nor the number of pregnancies has any predominating influence. The same is likewise true with regard to the health and nationality of the patient. The sex of the infant renders no assistance in our efforts to solve the problem any more than do the other facts already mentioned, for in these eighty cases reported there were forty-two male and forty female infants.

Among the thirty cases of battledore placenta, fifteen were in cases of male and fifteen in cases of female children.

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THE ALLEGED ANTAGONISM OF TOBACCO AND "ENGLISH CHOLERA."

In October, 1893, the Greenwich Workhouse, near London, suffered from an epidemic of choleraic diarrhœa, or "cholerine," that produced fatal results in eleven cases. The total number of cases was not far from two hundred and fifty. The disease was by many considered to be an outbreak of genuine Asiatic cholera, while others chose to denominate it "English cholera." The *British Medical Journal* for December 23d contains a special report that is positive in its denial that the attack was Asiatic in character. An examination was made, by order of the Local Government Board, by Dr. Klein and Dr. Bulstrode, and the results were made public on December 12th at an adjourned coroner's inquest. The testimony of the experts tended to show that the disease was an infectious diarrhœa such as occurs during cholera years, but lacks the severity of true cholera. The bacteriological researches made disclosed no Koch's bacillus in any case. Dr. Klein stated that he had obtained, by cultivations from the intestinal discharges or contents, a new bacillus of the *Proteus* group. This microbe was not found in the well-water of the workhouse, which water was beyond doubt the cause of much of the sickness. That water could not have been the sole cause or the *primum agens*, because there were persons taken sick outside the workhouse who had had no access to that water.

From a London letter to the *American Practitioner* we quote the following paragraph that has an interesting account of the alleged antidotal influence of tobacco against this form of infection:

"With regard to an outbreak of cholera at the Greenwich Workhouse, it is said that it is very noticeable that male inmates who had been great smokers or who had been in the habit of chewing tobacco had passed unscathed through the epidemic. Nearly every adult male in the workhouse was or had been a smoker, and the statistics of the epidemic show that only eighty-three males had been attacked as compared with one hundred and sixty females. Generally speaking, the males' attacks were of a mild nature. There were several old Irish women in the workhouse who smoked before their admission (and now when they could manage it), and it is stated that not one of them had been attacked. The investigation which has been held leads Dr. Burney, the senior medical officer of the institution, to believe that the epidemic must have been caused by the water."

MINOR PARAGRAPHS.

PRECIPITATE DELIVERY.

Dr. Gabriel Gorin reports a case in the *Annales de la Société medico-chirurgicale de Liége*, which presents several features that are interesting from a medico-legal point of view. The patient, a multipara, in what was supposed to be the eighth month of pregnancy, sent for the accoucheur on account of pain. On examination, the os was found dilatable, but the bag of waters did not present during the pains. Three days later he was sent for again, when digital examination disclosed the os dilated to the size of a five-franc piece. The membranes were intact, the presentation was normal, but the pains were far apart and feeble. The woman was in good condition. She felt as if she must go to stool, and asked the physician to step into the other room. As an examination had been made but a few moments before, the attendant thought there could be no impropriety in allowing her to use the vessel. She was no more than seated on the commode when she had what she supposed to be an evacuation of the bowels. It was urged that she get back into bed, but she remained for about a minute, when it was discovered that the infant had been born and was lying head downward in the water, apparently dead. Artificial respiration was resorted to, with the result of breathing being established in a short time. During the day there was hæmorrhage from the infant's nose, and its death ensued in the evening. An autopsy was not allowed, so it could not be made out whether death had been caused by fracture of the skull from the fall or not. The author had never heard of a case before where a patient was delivered of a child so near term without being aware of the fact, provided she was in her right mind. Insane patients may have such an accident, but it is not easy to understand, says M. Gorin, how extrusion of a full grown fœtus can take place without the knowledge of a sane mother. The circumstances of the case were such that no criminal intent could be laid to the woman, for she was acting under the direction of the doctor, and he, from his description of the case, could not be deemed guilty of culpable negligence. There was no doubt, though, that the death of the child was caused by its being precipitated forcibly into the vessel of water and being left there for some moments. That such accidents may happen to multiparous patients should be taken into consideration when, if ever, they are dealt with medico-legally. It is very easy to see how, under like circumstances, a child might be plunged upon the floor or expelled into a water-closet vault without any criminal intention on the part of the woman.

THE CLINICAL EFFECTS OF HYOSCINE HYDROBROMIDE.

The January number of the *Practitioner* contains the report of the clinical experiments of Gordon Sharp, M. B., with this drug. Although hyoscine, he says, is an isomer of atropine and hyoscyamine, it is generally believed to differ widely from them in its physiological effects. It was from the reports previously published of its beneficial action as a motor calmative, cerebral sedative, and hypnotic in delirium that the author was led to make a thorough test of the drug. It was used hypodermically in cases of delirium tremens and in others for sleeplessness. In one of the delirium cases the effect was to reduce the large movements to a constant jerking of the extremities. There was paralysis of the muscles of deglutition, and the pulse and the movements of respiration were increased to such an extent that sleep was impossible. The pupils were widely dilated, with the eyes wide open. For a time the patient was in a comatose condition, but finally came out from under the influence of the medicine. A mixture of chloral and potassium bromide was given to produce sleep and quiet nervousness. In another case of delirium the author was satisfied that death was hastened by the great stimulation of the circulation and of the respiratory center. In a case of anæmia, where everything had been tried to correct the headache and sleeplessness, a dose of hyoscine was given. It produced delirium so great as to alarm the attendants. There was convulsive jerking of the limbs, with extreme dryness of the throat, but without the slightest hypnotic effect. The author has decided that hyoscine differs but little in its action from atropine, and thinks that, until more is known of its chemistry, pharmacology, and clinical effect, it can hardly be recommended as a safe hypnotic.

THE BILL TO ABOLISH THE NEW YORK STATE COMMISSION IN LUNACY.

Elsewhere in this issue we print the text of Assembly bill No. 458, which aims to abolish the Commission in Lunacy, and confer upon a committee of the State Board of Charities—really upon the secretary of such a committee—the work of supervising the care of the insane in the State institutions. The purport of the bill is a good one, but it has been drawn very hastily, and ought to be thoroughly revised before being made the subject of debate in the Assembly.

ITEMS, ETC.

An Act to create a State Committee in Lunacy in the State Board of Charities, and to Abolish the State Commission in Lunacy.—The following is the text of Assembly bill No. 458, introduced by Mr. Glenn on the 2d inst.:

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Within ten days after the passage of this act the State Board of Charities shall, at a meeting called for that purpose, elect, by ballot, three members of its own body, who shall serve without compensation, and who shall constitute the State Committee of said board thereafter. At each annual meeting said board shall elect three members of said committee for the ensuing year. Said State Board of Charities shall appoint a secretary of said committee, who shall be known and designated as the State commissioner in lunacy, and who shall be a reputable physician, a citizen of the State, and a graduate of a legally chartered medical college, having been in the actual practice of his profession at least ten years, and who has competent knowledge of the treatment of the insane and the management of institutions for their care and custody. He shall receive a salary of five thousand dollars per annum, and one thousand dollars in lieu of his traveling and other incidental expenses. The said committee shall elect its own chairman.

Sec. 2. The said committee in lunacy is empowered and required to execute, through itself or its secretary, all the provisions of this act which pertain to its office; and shall direct its secretary accordingly, and shall also, with the consent of the board, make such other rules and regulations for its own government and that of its secretary as are not inconsistent with the provisions of this act, but said committee shall, at all times, be subject to the authority and control of the State Board of Charities.

Sec. 3. All the powers and duties conferred upon the State Commission in Lunacy by chapter two hundred and seventy-three, laws of eighteen hundred and ninety, and chapter two hundred and fourteen, laws of eighteen hundred and ninety-three, or acts amendatory thereof, or by any other act not specially mentioned or enumerated herein, are hereby transferred to, and conferred upon, the State Committee in Lunacy and its secretary, created by the first section of this act; and the State Commission in Lunacy is hereby abolished.

Sec. 4. It shall be the duty of the State Commission in Lunacy to transfer to the State Committee in Lunacy, on the written request of the chairman of such committee, all records, papers, books, office furniture, and other property, of whatever name or nature, belonging to the State and in its possession.

Sec. 5. The said committee shall be provided by the proper authorities with suitable accommodations in the State capitol for its office, where it shall hold its meetings as often as once in three months, the time for such meetings being fixed by the committee; additional meetings may be held at other times and places as the exigencies of the service may require. The committee is authorized to employ such number of clerks as it may deem necessary, but the total cost of such clerical service shall not exceed four thousand dollars in one year.

Sec. 6. This act shall take effect immediately.

The Medico-legal Society.—The programme for the next meeting, on Wednesday evening, the 14th inst., includes the following titles of papers: The Operation of the Lunacy Law of Pennsylvania, by Dr. Thomas G. Morton; The Railway Surgeon and the Law, by Clark Bell, Esq.; and Criminal Anthropology, by Sir Frederic Bateman, M. D., of England.

Dr. John S. Billings, of the Army, according to the *Boston Medical and Surgical Journal*, has been elected an honorary member of the Royal Academy of Medicine of Belgium, also a member of the International Statistical Institute, which has its headquarters in Rome.

The Society of Medical Jurisprudence.—At the next meeting, on Monday evening, the 12th inst., Dr. Landon Carter Gray will read a paper entitled What shall we do with those Turbulent Lunatics called Cranks?

Medical Society of the State of New York.—Dr. George H. Fox, of New York, has been elected President for the ensuing year.

The Death of Professor Theodor Billroth, the great Vienna surgeon, is announced as having taken place on Tuesday of this week. He was in his sixty-fifth year.

Society Meetings for the Coming Week:

Monday, *February 12th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); Society of Medical Jurisprudence, New York; New York Medico-historical Society (private—anniversary); New York Ophthalmological Society (private); Lenox Medical and Surgical Society (private), New York; Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, *February 13th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Kings County, N. Y., Medical Association; Medical Societies of the Counties of Delaware (semi-annual) and Rensselaer, N. Y.; Newark, N. J., Medical Association; Trenton, N. J., Medical Association (private); Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Baltimore Gynæcological and Obstetrical Society; Practitioners' Club, Richmond, Ky.

Wednesday, *February 14th:* American Microscopical Society of the City of New York; Metropolitan Medical Society (private), New York; New York Pathological Society; New York Surgical Society; Medico-legal Society, New York; Medical Society of the County of Albany, N. Y.; Pittsfield, Mass., Medical Association (private); Franklin, Mass., District Medical Society (quarterly—Greenfield); Philadelphia County Medical Society.

Thursday, *February 15th:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *February 16th:* New York Academy of Medicine (Section in Neurology); Baltimore Clinical Society; Chicago Gynæcological Society.

Saturday, *February 17th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Answers to Correspondents:

No. 421.—There is such a school (in the sense of a sect). We are under the impression that it has a teaching institution somewhere in Indiana, but we are not sure.

No. 422.—In certain cases it may be advisable to wait until the effect of the mydriatic on the accommodation has passed off before ordering glasses. However, many experienced oculists prefer to "slightly under-correct the total refractive error," as you suggest.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Eighty-eighth Annual Meeting, held in Albany, on Tuesday, Wednesday, and Thursday, February 6, 7, and 8, 1894.

The President, Dr. Herman Bendell, of Albany, in the Chair.

Hæmorrhagic Serous Effusion of the Pleura, with the Report of a Unique Case.—Dr. William S. Cheesman, of Auburn, reported a case in which aspiration had been performed and repeated every ten days for six months, about a quart or three pints being removed at each operation. Anæmia had then begun to appear, and in January, 1892, he had irrigated the pleural cavity for two hours with Thiersch's solution, with the addition of a small quantity of iodine, in the hope of bringing the pleural surfaces into contact. Recovery had resulted. Then effusion had occurred on the other side, with dyspnœa. After seven or eight such aspirations, lavage had been repeated, as on the side first affected, with similar satisfactory results. He could find but one similar case—one that had been reported by Heineman. Subsequently, fluid had appeared in the abdominal cavity in the speaker's case, with anasarca. Zahn thought that such a condition was due to thrombosis of the azygous vein. Dr. W. S. Ely, of Rochester, had subsequently seen this case, and withdrawn a large quantity of fluid from the abdomen; he had performed aspiration thirteen times. In all, forty-nine operations had been performed upon this patient, and her general condition was now good. The speaker was unable to state the true pathology of the case. There was evidently a constitutional disorder of some kind.

Dr. W. E. Ford, of Utica, thought that the fibroid disease of the uterus with which the woman was suffering had had something to do with the case.

Researches on the Eliminating Power of Diseases, and the Relation between Vaccinia and Enteric Fever.—Dr. William Finder, of Troy, in a paper thus entitled, said he believed that typhoid fever occurring subsequently to smallpox had some influence in eliminating the poison of that disease. He believed that vaccinia and typhoid fever were closely related. He had vaccinated several persons in whom the vaccination had not taken; then they had suffered typhoid fever, and during the following year revaccination had been successful. He believed that in those cases the previous immunity had been removed by the fever.

Pneumonia of the Aged.—Dr. JOHN H. PRYOR, of Buffalo, emphasized the title pneumonia *of* the aged as distinguished from pneumonia *in* the aged. The disease was usually fatal, and often was without very marked phenomena. Many cases were obscure and elusive, and sometimes the condition was entirely overlooked. The value of the physical signs which ordinarily were considered was often lost in the cases under consideration, for they frequently ran an atypical course. He had observed that the disease occurred most commonly between November and May. The upper lobe was first affected, and the disease then extended downward. The left lung was oftener affected than the right, but both lungs were frequently involved. The patients sometimes died suddenly and without having had severe symptoms. Sometimes there were delirium and great prostration, with very high temperature, the temperature taken *per rectum* reaching 104° to 105° F. The respiration might not be very rapid, and the characteristic sputa were rarely present and were never purulent during the period of resolution. The countenance was anxious, the mind was perturbed, and after the crisis diarrhœa frequently occurred. Often the first indications of the disease were found at the autopsy.

Dr. A. JACOBI, of New York, said that pneumonia of the aged often developed from bronchial catarrh, the same as in pneumonia in children. When there was a sudden rise of temperature from 100° to 103° he had usually observed that the issue was fatal.

The Diagnosis and Nomenclature of Fevers.—Dr. NELSON G. RICHMOND, of Fredonia, had observed that in western New York there was much confusion in the nomenclature of fevers, many fevers being confounded with typhoid. The reader thought that many of those cases were not typhoid. The fever was gradual in its onset and gradual in its subsidence, lasting from twenty-one to thirty-five days. The temperature increased gradually, seldom exceeding 103°; the tongue was sometimes clean and sometimes foul; in some cases there was constipation, in others there was not; there were also stupidity, indifference, jaundice, and emaciation. He had seen about fifty cases of this type, none of which had proved fatal. The name was really a matter of little consequence. There was seldom diarrhœa, sordes, brown tongue, delirium, or tenderness in the right iliac region. The South and West were the favorite habitats of malarial fever. The Lake Erie region was not now malarial. The question had occurred to the speaker, Was typhoid fever the only one prevalent in this region? As an answer, he was in favor of calling the condition under consideration Northern remittent fever. He was not sure whether the spleen in these cases was enlarged. No bacterial examinations had been made in any of them.

Dr. JACOBI thought it unfortunate that none of the author's patients had died, as the pathology was thus left obscure. He did not believe that a new name should be given until more of the pathology of the condition was known. Typhoid fever was often present, though many of the characteristic symptoms might be absent. If the spleen did not become smaller by the third week of the disease, the prognosis in cases of typhoid fever was apt to be bad. It was possible that many of the cases referred to by the reader of the paper were simply cases of fæcal poisoning in which constipation had continued for weeks without relief. In typhoid and malarial fever he believed that Ehrlich's test was a very reliable one.

Dr. RICHMOND stated that constipation was a very common disorder among the people in his section of the country. He had used calomel and other purgatives in his practice, as had been recommended by Dr. Jacobi. If he were to call such cases as he had described cases of typhoid fever, his opinion would not have been regarded as correct by those most concerned.

The Therapeutics of Oxygen.—Dr. A. W. CATLIN, of Brooklyn, read a paper in which he stated that the therapeutic use of oxygen was of very recent date. The treatment of disease by natural means was proving more and more efficacious as experience increased. Oxygen was a distinct remedial agent—one that should not be left untried until the patient was *in extremis.* It was the surest and most satisfactory stimulant that we possessed, and was applicable to many conditions. In profound shock, from whatever cause, it had been found to exercise a reviving effect. It was taken up quickly by the blood, but its chief value was in its effect upon the nerve centers, upon which it exercised a quieting and soothing effect. In hæmorrhage from typhoid fever he had seen relief in many cases. It would produce sleep, favor assimilation, and shorten the period of convalescence of typhoid fever. No agent was so well tolerated or so useful in restoring the equipoise of the physical condition. In cases of childbirth, pneumonia, bronchitis, and other exhausting diseases, the use of oxygen was indicated, and it should not be given late but early.

The Pathology of Diphtheria.—A general discussion on diphtheria, arranged by Dr. A. Walter Suiter, was opened with a paper by Dr. T. E. SATTERTHWAITE, of New York, who stated that the pathological anatomy of this disease was now well known. The pathogeny, which rested upon a bacterial basis, was not yet absolutely settled, though it was believed that the Klebs-Loeffler bacillus was the true cause. There was also, however, a diphtheroid disease, one that resembled diphtheria in many respects. The mere presence of a membrane did not necessarily indicate the existence of diphtheria. The bacilli of diphtheria might be present without the existence of a membrane. After the disease had fully developed all the organs of the body would show pathological changes. The diphtheritic membrane was usually attached to the underlying tissue. There was first local infection and then general extension of the disease. The peculiarities of the bacteria were described, and the difficulties of establishing the diagnosis. A diagnosis was usually to be confirmed by experiments upon animals. Bacteriologists found the bacilli in from seventeen to thirty-four per cent. of diphtheritic cases. With the bacilli of diphtheria there were also found streptococci and staphylococci.

Observations on the Diagnosis and on some Sanitary Aspects of Diphtheria.—Dr. A. WALTER SUITER, of Herkimer, stated that the identity of the Klebs-Loeffler bacillus was now definitely established. There was a diphtheria and a pseudodiphtheria. Many cases of so-called diphtheria were not true diphtheria. A clinical diagnosis in any given case was not usually sufficient. The general practitioner should in all cases have a laboratory assistant. The State should undertake the diagnosis in all cases of doubt. Laboratories should be established in various parts of the State, with suitable appliances and a sufficient appropriation therefor should be allowed. Oertel's discovery of a micrococcus had been followed by that of various others to the time of Klebs and Loeffler. Only by bacterial cultivations could positive results be obtained. About fifty per cent. of the cases which had formerly been treated as diphtheria had probably not been cases of diphtheria at all. Facts like this would tend to modify the statistics of the disease, as well as the diagnosis of any given case. Valuable results had been obtained in New York by the public examination of specimens which had been left for that purpose.

Croup and Diphtheria—their Unity or Duality.—Dr. W. H. Daly, of Pittsburgh, Pa., believed that differences in appearances in different cases of diphtheria were due to modifications which were not always readily explained. Arguments were possible for either unity or duality, and definite conclusions were not at present possible. The work with toxine inoculations had thrown much light on the history of the disease. Experimenters had produced in rabbits pareses, paralyses, and other phenomena similar to those which were seen in the human body. The practical application of their studies had shown that the use of laxatives resulted more favorably in the treatment of patients than the use of chloral and other nerve sedatives.

The speaker believed in the unity of the causes producing croup and diphtheria, but they might be modified in various ways by climate, hygiene, the conditions of the patient, etc. In the pharyngeal form of the disease the toxines and albumoses had their most favorable conditions for work, as they were readily absorbed. Hence constitutional affection quickly followed this form of the disease. Calomel was valuable in the treatment of the disease on account of its antiseptic effect. Not only diphtheria but many other zymotic diseases were to be explained by the influence of toxines, albumoses, and bacteria. The trouble was that the statements of experimenters were often too obscure for general comprehension. The speaker also made reference to the diphtheroid disease in which there was a mortality of five per cent. The disease was due to a bacillus, but perhaps there was no membrane.

The Comparative Status of Intubation of the Larynx.—Dr. Joseph O'Dwyer, of New York, believed that deductions should be made upon this subject with great caution. A great variety of results had been obtained with intubation. The number of cases of recovery with those who had had a small experience did not prove anything; the same was true as to those whose cases had been few and the results fatal. Acute laryngeal stenosis was fatal in a certain class of young children in ninety per cent. of the cases. This statement showed the desperate character of the disease if nothing was done to relieve it. The experience of intubation with some operators had now reached hundreds of cases, and from their experience deductions of value as to the usefulness of the operation could now be made safely. In many of the series of cases there had been a large percentage of recoveries—as large as from twenty to forty per cent. Many operators had almost abandoned the use of tracheotomy. Secondary tracheotomy after intubation was seldom a success. The percentage of recoveries with most of the experienced operators in Europe was rather higher than with operators in this country. Recent experience was favorable to intubation.

Complicated Intubation of the Larynx.—Dr. William Hailes, of Albany, narrated a case of diphtheria in a child which followed a severe attack of scarlatina. The case had also been complicated with albuminuria. Intubation had been performed; subsequently the condition of the child had become very serious, and salivation had been effected by means of the sublimation of calomel. The tube had been kept in position five days and then removed for an hour, when symptoms of suffocation had appeared and the tube had been replaced, with immediate relief. It had then been kept in position four days longer, and then definitively removed. The child had since suffered with an attack of chicken-pox and mumps, but was now quite well.

The Local Treatment of Diphtheria.—Dr. A. Jacobi, of New York, believed that the local treatment of diphtheria was best studied on external wounds or on diphtheria of the vagina. One should not use powders in the treatment of laryngeal diphtheria, as they were apt to produce nausea. Bad-tasting and nauseating medicines of all kinds should also be avoided. It should be remembered that gargles were effective only as far down as the pillars of the soft palate; therefore most of the gargling was useless. The dangers in diphtheria were, first, from suffocation; second, from heart failure and exhaustion; and, third, from sepsis. Sepsis and a fatal termination usually occurred in cases in which the nares were affected. The diphtheritic membrane should be destroyed by local applications of a mixture of equal parts of carbolic acid and glycerin, which was more effective than chlorine water. In general, local applications would be allowed by adults and large children. Smaller children would struggle and become exhausted if applications were attempted. The struggling was a serious matter with small and very sick children; besides, it was possible in such cases, as a rule, only to reach the tonsils with the application, and sepsis did not usually take place through this avenue. It was better with small children to give internally medicines which were easily absorbed, including iron, mercury, chlorine, and iodine. The form of diphtheria which was most dangerous was that which attacked the nares and the nasopharynx. In some cases the diphtheritic membrane was tough, in others soft and easily macerated. In the latter cases the virus was most readily absorbed. Where it was possible, it was well to apply medicines to the throat with cotton wrapped upon a long probang, and they should be applied as thoroughly as possible to the entire membranous surface. If the nares were affected, the medicine might be poured into the nose with a feeding cup, or a small syringe might be used. The use of an irrigator for the nose was not without danger. Applications should be made with the patient in a recumbent or semi-recumbent posture. Mild applications, including salt water and limewater, would also be found useful in many cases for their cleansing effects, also carbolic acid, creolin, and weak solutions of bichloride of mercury. Papayotin, in a five-per-cent. solution, or trypsin of similar strength, combined with bicarbonate of sodium, was also useful. For the treatment of adenitis associated with diphtheria, preventive and curative measures should be used. Ice would be effective in some cases. Iodoform, if given by injection, was too painful. If the swelling was extensive, long and deep incisions should be made, and they should be made as early as possible in the history of the disease. In cases in which hæmorrhages occurred, suitable astringents should be used, but solutions of iron should never be used to check hæmorrhage. The paralyses of diphtheria should be treated by means of friction. The most urgent cases were those in which the muscles of respiration were involved. If electricity was used, one must be careful that the muscles were not overstimulated.

The General Treatment of Diphtheria.—Dr. E. F. Brush, of Mount Vernon, believed that the object of treatment should be to support the strength of the patient until the dangerous period of the disease was past. He did not believe in any specific treatment. The disease was not due to a single cause. Danger was to be apprehended from the use of the potent drugs which were so highly recommended. Death in some cases of the disease was inevitable, whatever treatment might be adopted. The general indications of each epidemic should be studied. The intestinal tract should be kept open; calomel and suitable enemata should be given, especially when the temperature was above 103°. Tincture of chloride of iron with potassium was the best medicine which had yet been found for the treatment of the disease. Fluid food should be given, especially buttermilk, whey, oatmeal water, soups, and broths. Alcohol was quickly absorbed and eliminated, and large quantities of it would be tolerated. Turpentine might be given if for any reason alcohol was objected to; if necessary, alcohol might be given through a stomach-tube.

The Use of Tartar Emetic in Diphtheria.—Dr. H. De V. Pratt, of Elmira, believed that any method of treatment should be subject to modification and change. Diphtheria presented different forms in different epidemics; consequently the treatment must vary from time to time. In the last five years the speaker had treated forty-seven cases with tartar emetic and opium, and only two of the patients had died. He was accustomed to give a thirtieth of a grain of tartar emetic, with a sufficient quantity of opium, to very young children every hour for twenty-four hours. On the following day the dose was doubled, and this treatment was continued as long as the conditions indicated it. The constitutional effects of the tartar emetic were noticeable within a few hours, but toleration was quickly established, and in his experience no contraindications had been seen. It hastened the progress of the disease and then checked the development of the membrane, no matter where the latter was developed. The constitutional symptoms would improve with the change of the local conditions. The nourishment of the patient was also to be considered, the discharges were to be disinfected, and strict cleanliness was to be insisted upon. There had been no serious sequelæ in any of his cases; hence he must conclude that the treatment had been efficient. It was not an emetic treatment; there was no depression after the first few hours; the drug acted directly upon the poison of the disease.

(To be continued.)

SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

Meeting of December 6, 1893.

The President, Dr. Frederick H. Wiggin, in the Chair.

Bilateral Ovarian Fibro-sarcoma.—The President presented a specimen and read the history of the case. (See page 172.)

Intra-abdominal Sarcoma.—Dr. Charles Phelps presented a specimen and related the history of the case. (See page 172.)

Dr. Joseph D. Bryant said that he had taken a good deal of interest in this case because he had seen it prior to the operation, and had expressed the opinion that the tumor was attached to the abdominal wall, although he was not certain whether or not it had had an intra-abdominal development or had originated in the abdominal wall. The ultimate conclusion as to its attachment to the abdominal wall had been reached after examination by placing the patient on her hands and knees. He was not aware if the reader had mentioned the fact whether the peritonæum had covered the posterior surface of the tumor or not. He thought Dr. Phelps's conclusion that it had originated intraperitoneally was feasible.

Dr. J. W. S. Gouley said he had been at first very much in doubt as to the exact site of the tumor, and he had ventured to express the provisional opinion that it had originated in the mesentery or omentum, but the operation had shown that it had a very different origin. The tumor, lying underneath the great abdominal aponeurosis, seemed to have extended itself in the direction of least resistance—*i. e.*, backward into the peritoneal cavity—so that the growth was both intraperitoneal and extraperitoneal. He had had from the very first no doubt that it was a hard sarcoma. The explanation given by Dr. Phelps was an ingenious one, yet it did not seem to be in accordance with the findings of the pathologist. He had been particularly interested in the operation because of the amount of peritonæum removed; apparently a portion of peritonæum five by six inches had been taken away, and yet there had been no difficulty in approximating the edges of the wound. Hence we should not be discouraged in removing tumors of the abdominal parietes if the tissues of the abdominal wall were sufficiently redundant. There had been rapid union of the peritoneal surfaces in this case.

Dr. Phelps said that microscopical examination so far had been confined to the extra-mesenteric portion of the tumor, and consequently did not affect the question of its glandular origin. The opinion he had expressed, however, was purely speculative, and he was content to leave it as such.

Sacculated Aneurysm of the Abdominal Aorta cured Spontaneously.—Dr. Parker Syms presented the specimen and said that the patient had been a man of about forty years of age who had been admitted to the colored hospital in 1892. Until nine months before admission the man had been well. When admitted he was emaciated and suffered from abdominal pain after eating, and had marked indigestion. The attending physician had found a large pulsating tumor at the upper part of the abdomen and had made a diagnosis of aneurysm. The patient had been referred to Dr. Syms for surgical treatment some weeks after admission. Then there had been no pulsation and Dr. Syms had thought it probably a tumor of the pancreas. Exploratory laparotomy had been done for the purpose of diagnosis and possible treatment. This tumor had been found firmly imbedded in a mass of adhesions, extending down to and attached to the pancreas.

Unfortunately, the man had died of shock. The specimen was presented as being of interest in connection with the paper of the evening.

Pyelitis, Cystitis, Hæmaturia; Cystotomy, Nephrectomy, Cure.—The patient was presented by Dr. Syms, who gave the following history of the case:

James R., aged twenty-two years, had first been seen by him three years ago. Since the age of twelve years he had had bladder trouble, causing pain and very frequent micturition. When first seen by the speaker he had passed his urine every few minutes, wetting his bed at night, and had been absolutely unable to work on account of this trouble. He had been treated at a "quack" hospital in Buffalo, where they had told him he had a stricture. They told him they had operated on the stricture and they had passed sounds on him until his money was exhausted, when they had discharged him "cured!" in the condition in which Dr. Syms had found him. His urine had been ammoniacal, had been loaded with pus and mucus, and had contained constantly a small amount of blood as shown by the microscope. He had well-marked cystitis; and the speaker had suspected stone. Sounding for stone had given a negative result. He had never had gonorrhœa, and had no stricture.

To more thoroughly explore and to drain his bladder a perineal cystotomy was done. No stone was found, and no bladder tumor. The drainage and attendant treatment had cured the cystitis in a few weeks, and he had been able to hold his urine for about an hour during the day, and at night had had to urinate but two or three times. His urine had become fairly clear, but had continued to contain a small amount of pus and blood. The right kidney had been quite tender and a renal calculus or pyelitis had been suspected from some other cause. Therefore two years ago an exploratory nephrotomy had been done. The kidney had been found to be of normal size. A small, hard mass could be felt in the pelvis; to an exploring needle this had given a grating sensation. The pelvis had been incised and this mass had been found to be a spot of cicatricial tissue. At the first operation the patient had bled unusually; at this operation he had had so much hæmorrhage as to indicate that he was a "bleeder." The speaker had curetted the diseased spot and had meant to drain the kidney through the wound; but, as no amount of packing would stop the bleeding from the kidney, the organ had been rapidly removed and the wound packed and sutured. The patient had made an uneventful recovery, except for the interesting fact that scarlet fever had occurred about ten days after the operation. His one kidney had carried him safely through the disease, excreting some days as much as seventy ounces of urine. The patient was now well, could retain his urine, and was earning his living. His urine was normal, free from blood and pus. Dr. Syms thought that this patient's trouble was entirely due to the use of dirty instruments, infecting the bladder, and thus the kidney.

Dr. J. M. Byron said that this kind of cystitis was not very uncommon. He had seen several cases in which manipulation of the bladder had produced a gangrenous cystitis. Two or three weeks ago a case had been presented to the New York Pathological Society in which the cause of the cystitis had been traced to the introduction of improperly sterilized instruments. Some years ago a Russian observer had described a particular kind of bacterium which he had considered the special cause of this form of cystitis, but subsequent observations by other experimenters had shown these pathological changes to be generally due to the *Bacillus coli commune*, which, under certain circumstances, became exceedingly virulent. The occurrence of hæmaturia and the persistent cystitis showed that the process must have involved more than the mucous membrane.

Internal Aneurysm in European Residents of Japan.—Dr. S. Eldridge read a paper on this subject. (See page 165.)

Dr. A. A. Smith said that the paper seemed to clearly bring out the fact that aneurysm was much more prevalent in Japan than in any other country with which he was familiar, and it seemed also to confirm the view, held by the vast majority of observers, that syphilis was responsible for the large proportion of aneurysms occurring in any country. He was disappointed that no satisfactory explanation was offered for the large proportion of aneurysms in Japan aside from syphilis as a cause. He had been greatly interested in what had been said about the possible bearing of filarial infection on the occurrence of aneurysm. While syphilis had an important bearing on the ætiology of aneurysm, it was not uncommon, he thought, to see cases apparently having a different causation. No doubt luxurious living and particularly alcoholism had much to do with the changes in the walls of the arterial system which gave rise to aneurysm. All the various causes leading to increased arterial tension would seem to be to a certain extent factors in its production. He had felt that perhaps gout played a more important part than was ordinarily attributed to it, and he had sometimes thought that even the rheumatic tendency had something to do with the development of the changes in the arterial walls, yet he was forced to admit that in many cases he had been puzzled to find any satisfactory explanation for the aneurysm. He was surprised to hear of the rapid progress of many of the cases of aneurysm coming under the author's observation: perhaps climatic influence might be largely responsible for this. He would, however, be exceedingly doubtful about this having any special effect in causing those changes in the arteries which led to aneurysm. He would like to ask whether the European residents were people who had acquired gout, and also whether kidney disease was prevalent, and particularly whether the cirrhotic kidney was common, for aneurysm seemed to be often associated with this form of renal disease.

Dr. R. C. M. Page said that we might consider two classes of ætiological factors: (1) Anything which increased the blood pressure; and (2) anything which weakened the walls of the arteries.

In the first class were to be included proximity to the heart and the direction of the vessel, whether straight or curved. Where the vessel was curved it received a greater impulse, directed especially against the periphery. In eight hundred and eighty cases of aneurysm collected by Sibson, six hundred and thirty-two had occurred in the arch of the aorta alone, seventy-one in the thoracic aorta, and a hundred and seventy-seven in the abdominal aorta. It was easy to understand why the majority of these aneurysms should occur in the arch and so few in the thoracic aorta; but in the abdominal aorta the frequency was probably due to the facts that the vessel in that region was more subject to direct violence and injury, especially among laboring people, and also because the arterial coats, being bent upon themselves in almost every movement of the body, became brittle. As the European residents were not subjected to violence, he thought this accounted for the comparative rarity of abdominal aneurysm among them. Anything which gave rise to hypertrophy of the heart, notably aortic regurgitation by causing enormous enlargement of the left ventricle, resulted in the blood being driven with great violence into the arch of the aorta, and therefore it was not at all uncommon to find aneurysm of the arch associated with aortic regurgitation. Owing to hypertrophy of the left ventricle, we might also find aneurysm in connection with interstitial nephritis and in alcoholic subjects, as the habitual use of cardiac stimulants caused an increase in the force of the blood current. Any disease which would give rise to endarteritis with subsequent atheroma of course caused weakening of the blood-vessels, and of all these causes syphilis was the most important, and next to this, he would say, gout. Lead poisoning was stated by some to be a cause, but, as it was not infrequently associated with gout, it might be placed under the same head. Indeed, Garrod had stated that one third of all his hospital cases of gout could be traced to lead poisoning. The speaker thought rheumatism had something to do in producing endarteritis. It was not necessary to have an endarteritis, and therefore not necessary to have syphilis, to produce aneurysm. He had treated within the past six weeks a case in which there had been nothing present which would cause endarteritis, yet there had been a small aneurysm of the arch of the aorta which had developed as a result of occupation, the patient being required to do much lifting of heavy weights. The text-books gave a long list of diseases which might be mistaken for aneurysm, but it was not easy to mistake aneurysm of the arch of the aorta. He recalled one case of mitral stenosis which had simulated aortic aneurysm, but the presence of the obstructive murmur had led him to believe that it was an enlargement of the left auricle and not an aneurysm, and this had subsequently proved to be the case. To diagnosticate abdominal aneurysm from other pulsating tumors, the patient should be placed in the knee-chest position. The diagnosis of aneurysm of the thoracic aorta was much more difficult. Some twenty-five years ago there had been such a case, and it had so closely simulated pleurisy with effusion that it had been exhibited at the clinic at Bellevue Hospital as a typical case of that condition, yet the post mortem examination had shown it to be an aneurysm of the thoracic aorta. There was no doubt that in a certain number of cases the Tufnell method was very beneficial. It consisted in placing the patient in the recumbent posture and giving the maximum of nutrition while the force of the heart was kept at the minimum. This, along with the administration of iodide of potassium, caused a number of patients to get well. These cases were those in which there had not been much destruction of the inner and middle coats of the artery, or at least in which there had been no atheromatous changes. The speaker recalled the fact that several years ago a physician from the South, who had apparently got well under this treatment, had suddenly died without a previous reappearance of the tumor. His death had been due to rupture of the artery at this point before the tumor had had a chance to appear. Iodide of potassium was the ideal remedy, but in some cases even small doses—*e. g.*, five grains—caused intense salivation. In one such case he had changed to the chloride of barium. He thought the addition of arsenic was an advantage.

Dr. E. Le Fevre exhibited a specimen showing the effect of the filaria on the blood-vessels and heart of a dog. This was the first case of this kind he had seen. The dog was three years old, was born in Newark, and had never been taken out of the State. A few months ago, while in apparent health, he had suddenly fallen dead, and examination had shown rupture of the heart, due to immense quantities of filariæ in both sides of the heart, and extending into the vessels.

Dr. Byron said that we had recently come to know of a number of diseases which were undoubtedly produced by parasites which originally lived in the lower animals, and by some means or other had been communicated to man. Some years ago he had presented to this society a case of actinomycosis, which was a new disease so far as our knowledge of it was concerned. We knew also of the existence of filariasis in the lower animals. In Sicily filariæ had been noticed among sheep recently introduced into the country, yet so far they had been extremely rare among the inhabitants. It was generally understood that the prominent symptom of filariasis was hæmaturia; yet along the shores of the Amazon and of the Nile it produced abscess of the liver and a serocele, or so-called hydrocele. He knew of only one case of the *Distoma hepaticum;* yet this parasite was constantly found in animals, and might be communicated to human beings, for instance, by eating the liver of sheep infected with these parasites. As the filaria produced aneurysm of the aorta in the dog, why should it not produce the same condition in man?

Dr. Albert L. Gihon, of the navy, being called upon by the president, said that he had had a few years' experience in Japan, and could confirm Dr. Eldridge's statement that syphilis was an inducing cause of aortic aneurysm in that country; indeed, it seemed to him that it was at the bottom of all the other diseases he had encountered there, which fact made the practice of medicine comparatively simple. The Japanese themselves were not slow to learn that mercury and iodide of potassium were potent remedies in the treatment, and, with their accustomed haste and lack of thoroughness, went to work and very generally salivated their fellow-countrymen. They used to get their iodide from a house in Shanghai, but, objecting to its price and suggestively inquiring whether a cheaper article could not be had, were obligingly supplied with one especially sophisticated to their outlay.

He thought that the establishment by his friend Dr. Newton, of the British Navy, of a system of regulations and inspection of prostitutes in Japan (the erection of a Temple to Mercury at the approach to the Temple of Venus, as it was termed at the time) had had much to do with the eradication of venereal disease among the residents and patrons of the Yoshiwaras. He had himself, at the request of the local authorities of Nagasaki, where he had been stationed in charge of the hospital-ship Idaho, proposed to organize a lock hospital for the protection of that community, but the commanding officer of the station had been unwilling to authorize such action.

With regard to the treatment of aortic aneurysm by rest and iodide of potassium, to which some of the speakers had referred, Dr. Gihon mentioned the case of his friend Dr. Thomas F. Wood, secretary of the State Board of Health of North Carolina, who, having discovered himself to be a victim of this disease, had deliberately gone to bed and had remained there thirteen months, taking large doses of potassium iodide, and at the end of this time had got up, without his aneurysm, a strong, hearty man, and had died years after of another affection.

While in charge of the United States Naval Hospital at Brooklyn he had had three similar cases—one in a marine, who, after the ordeal contemplated had been explained to him, had gone to bed and had remained there eleven months. Near the end of his confinement, while lying awake one night, he had espied a thief enter the ward and carry off the men's clothing, and had jumped out of bed and secured him without injury to himself. Soon after this he had been declared cured of his aneurysm and had subsequently died of pneumonia, and at the necropsy no aneurysm had been found, as his friend, Medical Director Bogert, of this society, who had succeeded him in charge of that hospital, could bear witness.

Dr. Edward S. Bogert, of the navy, briefly confirmed Dr. Gihon's statement.

Dr. Gouley said that the author had referred to many different factors concerned in the production of aneurysm, beginning with syphilis. He would like to ask whether each and every factor was not really a remote cause, giving rise to disturbance in metabolism and to hyperlithæmia, which was known to excite degenerative changes in the arteries, that in consequence were weakened and liable to expansion b, the blood pressure. The syphilitic subject was depressed, and his system in no fit condition for proper metabolism. The same might be said of the drunkard, the glutton, the gouty, and the rheumatic. All these persons were hyperlithæmic and liable to suffer from degenerative changes in their arteries, large and small, and consequently from aneurysms.

Regarding the question of parasitic invasion, he said that he had noted that only animal parasites had been mentioned. All the physicians and surgeons present knew that occasionally patients were brought to the hospitals who died very suddenly and mysteriously within a few hours after admission, and the autopsy revealed what was known as ulcerative endocarditis. What was this but a microbic invasion? Might not an invasion of some other species of microbia lead to the formation of colonies of greater or lesser size in the arteries, and thus so weaken the coats of the arteries as to allow of their excessive expansion under the blood pressure? He would like to ask the reader of the paper whether in Japan he had seen aneurysms which were apparent on the surface of the body, such as on the head, neck, or extremities.

The speaker recalled the case of a medical man who had presented very unequivocal signs of aneurysm of the abdominal aorta. The patient had not known the nature of the tumor until the speaker had informed him of it, and also of the probability of its bursting soon. He had been placed in bed, and treated according to the method of Dr. Tufnell. After a time the tumor had hardened, and the man had lived six or eight months, and finally died of fibroid phthisis. He could not see what good could possibly come from the administration of iodide of potassium in cases of aneurysm. If, as Dr. Page had said, it got rid of the fibrous tissue formed around the aneurysm by Nature to protect it, it was wrong to attempt to remove this, and its administration should cause a decided increase in the size of the aneurysm. He failed to see the good done by iodide of potassium in syphilis, and every year he gave less of it, relying more and more on mercury. He had known iodide of potassium do a great deal of harm; he had never known it do much good.

Dr. Parker Syms said that he had been taught to believe that syphilis was the chief cause of aneurysm, and he still held that opinion, though his experience had not borne it out, for several of his cases of peripheral aneurysm had given no history of syphilis and had shown no manifestations of it. Of course this was but negative evidence. He held that anything which weakened the arterial wall was a predisposing cause of aneurysm, hence any cause of endarteritis was a factor. Then anything causing an increase in the blood pressure might become the exciting cause. In some of his cases traumatism had very distinctly been an element in the production of the aneurysm. He was very much surprised that so few peripheral aneurysms were found in Japan in proportion to those of the thoracic and abdominal aorta.

Dr. Matthew D. Field said that he had been especially interested in the remarks that had been made about syphilis in Japan. Dr. Sachs had recently said in a discussion at the Neurological Society that the latest and most accurate statistics gave syphilis as the cause of over ninety-two per cent. of all cases of locomotor ataxia, and that over sixty per cent. of cases of paresis were due to syphilis. The general opinion was, however, that syphilis was the predisposing cause, and that there was some other factor. The same might be said of the author's experience in Japan. If this were not so, how was the experience of Dr. Post to be explained, for he had found syphilis very prevalent in Syria, yet there was practically no aneurysm there. Hence, as in nervous diseases, it was syphilis plus something else, and he was very glad that the author had made a suggestion as to what the something else might be.

Dr. Eldridge said, with reference to gout and rheumatism, that, while gout might be present in a masked form, it was very rare to find it frankly manifested. The same was true with regard to articular rheumatism, which was of infrequent occurrence, and, perhaps for that reason, valvular disease of the heart was also rare. The brief duration of the aneurysms was certainly a remarkable feature; to the best of his recollection, the average period was certainly not more than one or two years, and often very much less. Nephritis was not at all common, and the cirrhotic form was not more frequent than the other varieties. He did not think the statistics of Simpson would hold in Japan, and the whole question was a very puzzling one to him. The point made by Dr. Page on regurgitation in the development of aneurysm of the arch he had answered in connection with his consideration of valvular disease in general. Tufnell's treatment he had tried in a number of cases, but had had a partial success in one only, and that had been a case of aneurysm of the abdominal aorta, which, although previously well marked, had almost entirely disappeared under this treatment. The patient then, taking advantage of a difference of opinion between his medical advisers, had gone to work, and had died suddenly. The post-mortem examination had shown that the walls of the sac were thickened and consolidated, and that the relapse had taken place at a thin point where a secondary sacculation had formed. While he thought syphilis was the chief cause of aneurysm in Japan, he could not of course help believing that other causes had a share in its production; still, such an enormous proportion of the cases coming under his observation had such a clear syphilitic history that had it not been known that syphilis was a predisposing cause it would have still directed his attention to this disease as an ætiological factor. In his whole experience he had seen only one peripheral aneurysm in a European in Japan, and miliary aneurysms seemed to be almost equally rare. Probably because the aneurysms were of such short duration, calcareous infiltration was very infrequent. He could not explain the action of iodide of potassium, but it certainly relieved the intense pain and some of the urgent symptoms, and, in his experience, had always been of some benefit. A pretty large experience in the treatment of syphilis in general had led him to use this drug less and less, and he now treated many cases entirely without it, though, where really called for, he had, of course, found it invaluable.

He believed with Dr. Field that these aneurysms were due to syphilis plus an unknown factor; he was sorry that this other factor had not as yet been definitely determined. It was frequently difficult to say what patient had a syphilitic history, and often the only evidence was to be found in the lesion for which the patient sought treatment. In this way aneurysm might be the only evidence of syphilis.

On motion of Dr. W. R. Townsend, the society tendered a vote of thanks to Dr. Eldridge for his very able and valuable paper.

Book Notices.

Atlas of Head Sections. Fifty-three Engraved Copperplates of Frozen Sections of the Head, and Fifty three Key Plates with Descriptive Texts. By William Macewen, M. D. New York: Macmillan & Co., 1893. Pp. ix– . [Price, $21.]

The author states, in the introduction to this beautiful collection of plates, that the fifty-three sections represented in this volume were selected from over a hundred specimens. By making a section of the head it has been possible for the artist to delineate the relation of the brain to the exterior of the skull, thus making these plates of great value to the student of cephalic topography.

While each plate is complete in itself, various structures may be traced through a series of sections, coronal, sagittal, and horizontal. Coronal and horizontal sections of the head of a child are represented as well as those of an adult. The main points in each plate are described in a key representing the plate in outline.

This work can only be compared with Dalton's magnificent topographical atlas of the brain, now out of print, or Frazer's more recent atlas. The plates are well executed, and the volume is a necessity to every surgeon likely to be called upon to operate on the brain in cases of disease.

Outlines of Obstetrics. A Syllabus of Lectures delivered at the Long Island College Hospital. By Charles Jewett, A. M., M. D., Professor of Obstetrics and Pædiatrics in the College and Obstetrician to the Hospital. Edited by Harold F. Jewett, M. D. Philadelphia: W. B. Saunders, 1894. Pp. 264.

The author states that this little volume is intended as an aid to the study of obstetrics in both the didactic and the practical work of the college course. Its arrangement enables the student to secure a classified knowledge of the outlines of this subject.

The work includes a syllabus of the anatomy of the female genital organs, of the physiology and pathology of pregnancy, of the physiology of labor and of the puerperal state, of obstetric surgery, and of the pathology of labor and of the puerperium.

The author's style is terse and vigorous, and we believe that the volume will prove very useful for the purposes intended.

The Anatomy and Surgical Treatment of Hernia. By Henry O. Marcy, A. M., M. D., LL. D., of Boston, President of the American Medical Association; Surgeon to the Hospital for

Women, Cambridge, etc. With Sixty-six Full-page Heliotype and Lithographic Plates, including Eight Colored Plates from Bourgery, and Thirty-seven Illustrations in the Text. New York: D. Appleton & Company, 1892. Pp. xvii-421. [Price, $15.]

The publishers of this work have certainly conferred a favor on the profession by the liberality they have displayed in the numerous magnificent illustrations that the author has so carefully selected from the rare and comparatively inaccessible volumes of Sir Astley Cooper, Bourgery, Darrach, Guthrie, Scarpa, and Cloquet.

After a general consideration of the frequency of hernia, the anatomy of the parts involved in inguinal hernia is described. The author then describes the anatomy of congenital hernia, including encysted hernia. The symptoms and complications of direct and of irreducible inguinal hernia are described, with numerous excerpta from the older writers; in this we think that Dr. Marcy has not done himself justice, because his own experience is sufficiently extensive to warrant him in indulging in personal narration rather than quotation.

The author advises early recourse to an aseptic operation for the relief of strangulated inguinal hernia, and it is his custom to sew the divided sac across its neck with a double tendon suture and then excise the proximal portion of the sac.

The anatomy of femoral hernia and the operative measures for its relief, when strangulated, are next described. The author's operative procedure for the relief of this condition is similar to that for inguinal hernia.

Short chapters are devoted to obturator hernia, ischiadic hernia, cæcal hernia, ovarian hernia, cystic hernia, ventral hernia, and diaphragmatic hernia.

In the chapter on umbilical hernia there are slight misprints on page 198, Æginatus being written for Ægineta, and Desault being spelt with two s's; and on page 204 Lucas-Championnière is referred to as Championnière. On page 109 and elsewhere Hagedorn is spelled Hagerdorn.

An interesting review of the operative measures advocated for the cure of hernia is given, also a review of the animal suture. Nowhere can a more complete history of this latter surgical resource be found.

The latter chapters of the volume are devoted to the treatment of hernia, especially by the use of the buried tendon suture with which the author's name has been so long connected. It would be futile to here review the details of an operation that has produced in his hands such satisfactory results.

Dr. Marcy does not aim to do more than make this a practical treatise on hernia as met with in general practice, and the illustrations so elucidate the text that the volume will serve as a guide to those who are not frequently called upon to perform this operation and whose recollection of anatomical relations is somewhat rusty.

The beautiful typography and general execution of the work make it an *édition de luxe*.

Climates of the United States, in Colors. Popular Edition of Denison's Charts, with Additions. By Charles Denison, A. M., M. D., Denver, Col., Professor of the Diseases of the Chest and of Climatology, Medical College, University of Denver, etc. Designed for the use of Physicians, Tourists, Health Seekers, Farmers, and Schools. Chicago: The W. T. Keener Company, 1893. Pp. 47. [Price, $1.]

This popular edition of the author's excellent charts gives the annual cloudiness, annual rainfall and temperature, and annual wind charts, also seasonal charts showing combined atmospheric humidities for spring, summer, autumn, and winter, as well as the isotherms and wind indications for each of these seasons. In all, there are twelve charts and eleven tables that are the result of an immense amount of labor in condensing the facts stated in the annual reports of the chief signal officer of the army for eleven years.

This volume should find a large sale, appealing, as it does, to the interests of so many occupations.

A Manual of Practical Hygiene, designed for Sanitary and Health Officers, Practitioners, and Students of Medicine. By W. M. L. Coplin, M. D., Adjunct Professor of Hygiene, Demonstrator of Pathology, and Curator of the Museum, Jefferson Medical College, etc., and D. Bevan, M. D., Instructor in Hygiene and Clinical Microscopy, Jefferson Medical College, etc. With an Introduction by H. A. Hare, M. D., Professor of Therapeutics, Materia Medica, and Hygiene in Jefferson Medical College, Philadelphia. With One Hundred and Forty Illustrations, many of which are printed in Colors. Philadelphia: P. Blakiston, Son, & Co., 1893. Pp. xvi–25 to 456. [Price, $4.]

The first chapter in this volume is devoted to the cause and prevention of disease, and in it the authors state that it is not of sufficient importance to cavil over the distinction between the terms contagion and infection in referring to communicable diseases. Throughout the volume the terms are used synonymously, an unfortunate fact for the student.

While the authors state that there have been no well-founded objections to isolation and segregation of patients afflicted with leprosy, syphilis, or tuberculosis, yet it seems to us that there are excellent objections—leprosy, to be communicable, requires certain factors of environment and idiosyncrasy, and one of the best boards of health in this country, that of Louisiana, refused some years ago to be a party to a proposition that would make life more unendurable for the leper by isolating him from friends and relatives. Fournier is authority for a statement that corroborates the experience of all practitioners of extended experience, that most cases of syphilis are (to use his expression) legitimately acquired; and the *caveat emptor* of the market-place may be used by the sanitarian when he is asked to be a party to enact laws that are repugnant, that are partisan in their application to one delinquent only (lock-hospitals for males have always failed to accomplish their intended purpose), and that are not justified by any prevalence of syphilis; while the great prevalence of tuberculosis has convinced the profession that the most careful supervision of food stuffs and the greatest sanitary care of the tuberculous would but in a measure limit that disease as long as it was possible for a person to be affected with it for years and present no decided physical symptoms.

The duration of isolation for each of the communicable diseases is specified, and disinfection is described with sufficient detail.

The second chapter deals with individual hygiene during infancy, childhood, and puberty.

The third chapter considers the sanitary features of clothing.

The chapter on food describes the latest methods of testing milk. The Beimling process is accurately explained, and a sufficiently detailed account of meat inspection is given.

The chapters on water and air, while not exhaustive, are still sufficiently complete to answer the requirements of the practitioner or student.

The chapter on climate is properly written with reference to the needs of the American physician.

The chapter on soil, like the chapters on water and air, does not aim to be compendious, but simply gives such facts as may be of daily use.

One of the most concise as well as interesting chapters in the volume is that on habitations. It describes the various sanitary features of a house and the method of making a sanitary inspection thereof.

The chapter on sewage is somewhat too concise.

The authors have evidently aimed to make their work compact rather than comprehensive; and, while this has caused the omission of certain topics that are familiar in works on hygiene, the reader will appreciate their avoidance of voluminousness.

What the book does give is, on the whole, a practical summary of recent progress in hygiene.

The Technique of Post-mortem Examination. By Ludvig Hektoen, M. D., Pathologist to the Cook County Hospital, Chicago, etc. With Forty-one Illustrations. Chicago: The W. T. Keener Company, 1894. Pp. viii–172. [Price, $1.75.]

The author states that, while this little book has been prepared for the guidance of medical students, still its scope and method have been arranged with the intention of making it useful to the practitioner.

The form of record and the instruments employed, as well as the various steps in the examination of the body, are described, and the text is elucidated by forty-one illustrations, but we note that Figure 24 is a repetition of Figure 5.

We are glad to see that the author urges that the necropsy should be made as soon as practicable after death.

The work is admirably arranged and printed, and it is the best manual on this subject that we have seen.

A Theory of Development and Heredity. By Henry B. Orr, Ph. D., Professor at the Tulane University of Louisiana. New York and London: Macmillan & Co., 1893. Pp. ix–255. [Price, $1.50.]

The author considers that an explanation of growth, development, and inheritance is afforded by the assumption of the creation of a primitive mass of protoplasm that acquires nervous co-ordinations which influence activity and growth. As this mass divides and subdivides it adds continually new co-ordinations to those already acquired; the process of growth and development comes by repetition to have the character of reflex action—that is, becomes more rapid. "As the same forces act on each generation and form a series of stimuli that are similar for each generation, so each generation repeats in its life the course of development followed by all its ancestors."

We do not believe there is any evidence that will sustain the author's conclusion that the greatest part of the molecular change which is brought about in living matter by the action of external forces is that change which occurs in the nervous organization. In the first place, he confounds the simulation of the functions of the nervous system with the existence of nervous structures. It does not seem to us that the latter need be assumed to explain the phenomena of development and heredity in plants and the lower animals. A study of the phagocytic activity of white blood-cells suffices to explain all such phenomena by analogy. And yet there is no change in the nervous organization of the phagocyte, and there is no nervous organization to be changed. Such a position ignores the inherent forces of a living cell, and the nervous system in living organisms is but an incident, a medium for the transmission of afferent and efferent impulses in the lower forms, and, in addition to these, in the higher forms for storing impressions.

The study of micro-organisms has shown that while, morphologically, there is no change, yet by changes in environment a harmful may in successive generations develop into a harmless microbe. Such a change is necessarily consequent upon some intrinsic transformation of the micro-organism that is certainly independent of any nervous organization. Reasoning by his method of analogy, subject to fallacy as such a method of logic has always been considered, we are justified in concluding that in higher forms of living matter molecular change is produced by the action of external forces independent of even the most elementary form of nervous structure.

Neither heredity nor atavism satisfactorily explains all the phenomena of life; and environment, including education and training, necessarily influences beneficially or disadvantageously the vital phenomena.

We do not believe the evolutionary theory suffices to explain either development or heredity, for there are gulfs in the continuity of the surface of such speculation that are, and probably will remain, impassable.

The Report of the Department of Pathology of the University College, London, 1892–'93. Together with a Collection of Papers and Abstracts published from the Laboratory. Volume I. Edited by Victor Horsley, F. R. S., F. R. C. S., and Rubert Boyce, M. B.

This volume is composed of a collection of publications by investigators at work in the pathological laboratory of the University College. The papers embraced in it have been published during the period from the beginning of 1892 to May, 1893, and have appeared in various medical and scientific journals. Actually the volume is a collection of reprints on pathology and histology, and it is a most creditable exposition of the character of the work done in the institution.

Relation d'une épidémie de choléra. (Étude clinique et expérimentale.) Par MM. A. Mairet, professeur de clinique des maladies mentales et nerveuses, et F. J. Bosc, chef de clinique des maladies mentales et nerveuses à la Faculté de médecine de Montpellier. Avec 4 planches et 11 tracés dans le texte. Montpellier: Charles Boehm, 1893. Pp. 6–98.

This volume gives the observations made by the authors during an epidemic of cholera at the Montpellier Insane Asylum in June and July of 1893. The disease was introduced into the institution by a male nurse from Marseilles, and there were fifty-five cases of cholera in all—twenty-three in males and thirty-two in females.

The authors trace the origin and the course of the epidemic very carefully, and consider that, as the disease did not appear in the wards for females until sixteen days after it had existed in those for males, the water supply of the institution could not be considered as the disseminating medium.

The nurse first affected had charge of the linen, and was on duty two days after he became sick, so the authors think it is probable that the clothing was infected by him during those days. Their experience showed that the number of cases increased when the temperature and the height of the barometer were elevated.

The symptomatology, pathology, diagnosis, prophylaxis, and treatment are very fully considered.

Their brochure is an interesting account of a local epidemic of cholera and of its management.

BOOKS, ETC., RECEIVED.

Dissections Illustrated. A Graphic Handbook for Students of Human Anatomy. By C. Gordon Brodie, F. R. C. S., Senior Demonstrator of Anatomy, Middlesex Hospital Medical School, etc. With Plates drawn and lithographed by Percy Highley. In Four Parts. Part I. The Upper Limb. With Seventeen Colored Plates, two thirds natural size. Pp. iv–34. Part II. The Lower Limb. With Twenty Colored Plates, two thirds natural size, and Six Diagrams. Pp. 36–74. London and New York: Whittaker & Co., 1894. [Price. $4.50.]

Venereal Memoranda. A Manual for the Student and Practitioner. By P. A. Morrow, A. M., M. D., Clinical Professor of Venereal Diseases in the University of the City of New York, etc. New York: William Wood & Co., 1894. Pp. iv–332.

The Diseases of Personality. By Th. Ribot, Professor of Comparative and Experimental Psychology in the Collége de France. Chicago: The Open Court Publishing Company, 1894. Pp. 157.

The Johns Hopkins Hospital Reports. Report in Gynæcology, II. Baltimore: The Johns Hopkins Press, 1894. Pp. 301–761.

Bilateral Cerebral Thrombosis due to Syphilitic Arteritis, with Incontinence of the Vesical and Anal Sphincters. By J. T. Eskridge, M. D., Denver, Col. [Reprinted from the *Medical News.*]

Tumors of the Cerebellum. Clinical Lecture delivered at the Arapahoe County Hospital. By J. T. Eskridge, M. D. Denver, Col. [Reprinted from the *International Medical Magazine.*]

The Pathology, Symptomatology, and Treatment of Hæmorrhoids. Simple and Complicated. By Thomas H. Manley, M. D. [Reprinted from the *St. Louis Medical Review.*]

Surgical Therapy of Rectal Cancer. By Thomas H. Manley, M. D. [Reprinted from *Merck's Bulletin.*]

The Suprapubic Removal of an Enormous Vesical Calculus, together with the Pathology of Stone in the Bladder. By Carl V. Vischer, M. D., Philadelphia. [Reprinted from the *Hahnemannian Monthly.*]

The Relations of Urinary Conditions to Gynæcological Surgery. By Charles P. Noble, M. D. [Reprinted from the *American Medico surgical Bulletin.*]

The Causation of the Diseases of Women. By Charles P. Noble, M. D., Philadelphia. [Reprinted from the *International Medical Magazine.*]

Report of a Year's Work in Minor Gynæcological Surgery in the Kensington Hospital for Women, Philadelphia. By Charles P. Noble, M. D. [Reprinted from the *Transactions of the Philadelphia County Medical Society.*]

Fibro-myoma of the Uterus and Broad Ligament of Forty-five Years' Duration. By Thomas H. Manley, M. D. [Reprinted from the *American Gynæcological Journal.*]

Surgical Treatment of the Tumors of the Neck. By Thomas H. Manley, M. D. [Reprinted from the *Medical Brief.*]

Cocaine Analgesia in the Treatment of Hæmorrhoids, of Ulcers, Fistulæ, and Fissures in the Ano-rectal Region. By Thomas H. Manley, M. D. [Reprinted from the *Medical Brief.*]

Non-malignant Tumors of the Larynx. By W. Scheppegrell, A. M., M. D. [Reprinted from the *New Orleans Medical and Surgical Journal.*]

The Elements of the Differential Diagnosis of Pott's Disease in Childhood. By Royal Whitman, M. D. [Reprinted from the *New York Polyclinic.*]

Comparative Microscopical Studies of the Ovary. By Francis Foerster, M. D. [Reprinted from the *American Journal of Obstetrics.*]

How shall we make our Homes Healthy? By Benjamin J. Portugaloff, M. D. [Translated from the Russian.]

Fifteenth Annual Report of the Trustees of the Binghamton State Hospital, at Binghamton, N. Y., for the Year ending September 30, 1893.

Eighth and Ninth Annual Reports of the Animal Industry for the Years 1891 and 1892.

Ueber Salipyrin. Von Professor Dr. von Mosengeil, Bonn. [Sonder-Abdruck aus *Deutsche Medizinal-Zeitung.*]

Report of the Kensington Hospital for Women, from October 10, 1892, to October 9, 1893.

Report of Two Years' Work in Abdominal Surgery at the Kensington Hospital for Women, Philadelphia. By Charles P. Noble, M. D. [Reprinted from the *International Medical Magazine.*]

Preliminary Report of the Income Account of Railways in the United States for the Year ending June 30, 1893.

Miscellany.

Exophthalmic Goitre as a Sequel of Influenza; Strophanthus as a Remedy; and the Effects of Overdoses of Thyreoid Extract.—At a meeting of the Victorian Branch of the British Medical Association held on November 15, 1893, Dr. R. L. McAdam read a paper in which he gave the history of a case of exophthalmic goître that had seemed to be the sequel of an attack of influenza in a girl sixteen years old. A report of the proceedings is given in the December number of the *Australian Medical Journal.* For several months treatment of the exophthalmia was unsatisfactory, and in a consultation it was suggested that one of the tonsils, which was unhealthy, be removed, and that was done. Dr. McAdam continued as follows:

"I saw no more of the patient till over two months had elapsed. Then, about the middle of March, she returned to her home, and once more put herself under my care. The effect of the treatment hitherto pursued had been disappointing, and almost nil. Practically, the *status quo ante* was still maintained, though she complained now of palpitation, and I found a well-marked systolic apical murmur present. I determined to make yet another alteration in the treatment, and, while still continuing the faradism, I began to give her tincture of strophanthus. The preparation used was Burroughs, Wellcome & Co.'s, made according to Professor Frazer's formula. The initial dose was ♏v in water three times a day. By gradual increments, I got the dose up to ♏xv thrice daily. This quantity she continued to take for many months, without the slightest appearance of toxic symptoms. Within two weeks after commencing the use of the strophanthus a change for the better became manifest; the rapidity of cardiac action lessened, the prominent eyeballs retreated, the thyreoid decreased in size, the tremors diminished, sleep became natural, appetite improved, the patient felt able for more exercise, she began to put on flesh, in fact, a general amelioration of her condition was unmistakably evident. In three months she increased two stone in weight. Toward the end of April, however, she became anæmic, and I gave her Blaud's pills in conjunction with the strophanthus, with satisfactory results. As time rolled on, the patient steadily improved, and in July menstruation recommenced, after a cessation of eight months. On several occasions I caused the strophanthus to be discontinued for a little while, and each time the old troubles began to reappear, to subside, however, on resuming the drug. Finally, in November last, I felt justified in pronouncing the patient cured. At that time she was in first-rate health; she could play tennis, take long walks, enjoy dancing, and, in fact, engage in all the exercises to which she had formerly been accustomed. In October and November, coincidently with the menstrual period, a curious condition was manifested in the patient's eyelids. They became swollen, painful, and discolored, apparently from an exudation of blood-stained serum subcutaneously. Upon the subsidence of the swelling, which occurred in the course of three or four days, the usual oxidation changes which are found in an ordinary ecchymosis in that region took place. I mention the phenomenon, because I do not remember to have met with it, can find no reference to it, and am somewhat in doubt as to how to explain or account for its occurrence.

"About a year has now elapsed since I ceased attending Miss F. During that time she has continued in excellent health and spirits. A few weeks ago I had the opportunity of again examining her, and found that her condition was in all respects satisfactory. One interesting circumstance particularly struck me as evidencing how complete a change had taken place. I mentioned that while ill the patient's singing voice had almost entirely failed. Now, I was informed, it was remarkably good, and she was singing better than ever before, and with greatly increased breathing power. Her chest expansion had increased to between two and three inches.

"This case is worth recording, I think, for several reasons: First of all, it is fair to infer that the patient's attack of influenza was in some way concerned in bringing about the subsequent train of symptoms which justified the diagnosis of Graves's disease. Additional evidence that influenza can act in this way was recently afforded me by a patient who sought my advice for dyspepsia. On inquiring into her history, it appeared that a year before she had been attacked by influenza. Following this, there quickly occurred symptoms which, from her description and that of the friend who accompanied her, there could be little doubt were due to a mild form of Graves's disease. Secondly, it is not often that one has the satisfaction of seeing so entire a recovery from this distressing and frequently fatal trouble—a recovery, too, which was so comparatively quick in its occurrence. Thirdly, the history affords ground for thinking that in strophanthus we have a drug which is well worth trying under similar circumstances.

"Permit me, in conclusion, to use this case as a peg on which to hang a few remarks as to the causation and nature of the strange affection of which it is so good an example. Some time since, while reading the accounts of the treatment of myxœdema by thyreoid extract, I was much struck with the similarity between many of the phenomena produced by overdoses, and symptoms which one finds in Graves's disease. Here are some of the records to which I refer: G. R. Murray found that following a rapid injection of thyreoid extract there occurred flushing, nausea, and pain in the lumbar region. Another observer notes that as the result of too rapid absorption of the extract, tremors and quivering of the limbs developed. Sims Woodhead was struck with the fact that in rabbits peculiar effects were produced on the heart, and that these frequently culminated in degeneration of the muscular tissue of the organ. Again, in a myxœdematous patient of Hector Mackenzie's, overdoses administered by the mouth caused anorexia, a pulse of 116, and on one occasion a rise of temperature to 100° F.

"Similar experiences might be multiplied, but the foregoing will suffice. Now, many years ago in England, Mr. (now Sir John) Simon suggested that the function of the thyreoid gland consisted in secreting some substance which was necessary for the nutrition of the nervous system. This idea has in recent years been remarkably verified. But may we not proceed further still, and, in the light of the knowledge we now possess, hold that, while the thyreoid secretion in normal quantity is a *sine qua non* of healthy nervous action, its presence in superabundance is, on the contrary, harmful and injurious in a high degree? May we not, in fine, maintain that in an overactivity of the thyreoid gland is to be found the true cause of Graves's disease? Such a view seems to me to be eminently reasonable and worthy of acceptance, and it has recently derived fresh support from the success which has followed in this affection on partial removal of the gland. At any rate, such a pathology is, I take it, far more likely to be true than the vague, unsatisfactory, and even contradictory theories which have hitherto been propounded."

Interstitial Injections of Iodine in the Treatment of Goitre.—Dr. Georges Mangin, an interne of the Paris hospitals, contributes an article on this subject to the *Gazette médicale de Paris* for January 13th, in which he gives the details of the procedure as practiced by Dr. Duguet. These injections, he says, may be employed in any case of goître, but they are especially appropriate in those of medium size, of comparatively recent formation, fleshy, not much indurated, and not yet calcified, whether they are cystic or not. This little operation succeeds best in hydatid cysts of the thyreoid body, which are always cured by a single injection. Contraindications are: Albumin or sugar in the urine, the existence of the menstrual flow, exophthalmic goître, cancerous goître, and a cystic goître containing blood (only a relative contraindication). Accidents in this treatment have occurred to certain operators only because they have not strictly followed the letter of M. Duguet's instructions. Before undertaking the operation certain precautions should be taken. The patient's urine should be examined; it should be ascertained if she is menstruating; and the neck should be measured immediately above the goître, around it, and below it, and this measurement should be repeated before each injection. Various liquids have been tried, but none is so good as pure tincture of iodine. The needle of the syringe should be of steel or of irido-platinum, and it should be very sharp. After being used it should be cleansed in a very weak solution of ammonium chloride or potassium iodide, and then left until it is to be used again in a ten-per-cent. oily solution of carbolic acid. This having been done, it is necessary to determine the most appropriate point for inserting the needle. The operator should assure himself that the tumor has no souffle and that it presents no expansile movements; then he should palpate it carefully to find the central, fleshy, least resistant part, as far as possible from the large veins which sometimes ramify over its surface and also from any arterial pulsations. Into that point he should plunge the needle. The syringe is to be filled with tincture of iodine and the air expelled. Then the operator raises the patient's head in such a way as to make the throat prominent, holds the tumor immovable between the thumb and forefinger of the left hand, compressing it gently, with the right hand plunges the needle slowly to the depth of from half an inch to an inch, and waits to see if any liquid escapes through it. If pure blood flows, the procedure is to be stopped, the needle is to be withdrawn, and an attempt made to introduce it in one or two other situations, until one is found from which there is no flow of blood. If this can not be done, the idea of administering the injection must be given up for the time being. If a coffee-colored or a chocolate-colored liquid flows, the syringe should be connected with the needle, and, if the cyst is small, the liquid aspirated, and then the injection proceeded with. If, on the contrary, the cyst is large, slow aspiration should be performed with a regular aspirator. In case the injection is to be proceeded with, the syringe filled with tincture of iodine is to be connected with a needle and the piston pushed down very gently and slowly, while the operator observes the patient's face and interrogates him as to his sensations. At the first injection not more than half or three quarters of a syringeful should be injected. When the injection has been made, the needle, still connected with the syringe, is to be withdrawn rather suddenly; then the left forefinger is to be placed over the puncture in order to stop the slight discharge which might occur. If the patient's neck or the operator's hands have been soiled by the tincture of iodine, they should be washed in ammonia water. Usually nothing special occurs as the immediate result of these injections, but sometimes there is observed local heat, with tumefaction, a little embarrassment of the movements of the neck and in swallowing, and occasionally some painful sensations about the jaw, the teeth, or the ear of the side on which the injection has been made. These are benign phenomena, and do not last more than a day or two. They constitute no reason for not repeating the injection weekly, as should be done. Occasionally there is feverishness, with chills, headache, depression, agitation, sleeplessness, and gastric disturbance, symptomatic of a slight degree of acute iodism, which usually does not last more than from a few hours to a day or two. The author closes with the statements that this method of treatment acts by causing absorption and a non-suppurative inflammation, and that it is absolutely harmless and of marvelous efficacy when it is employed early and with discernment.

Guaiacol as an Antipyretic.—The *Medical News* for January 27th publishes a portion of a lecture delivered at the Pennsylvania Hospital on January 13th by Dr. J. M. Da Costa, of Philadelphia, entitled Clinical Remarks on the External Use of Guaiacol in reducing High Temperature in Typhoid Fever and other Febrile Diseases. Dr. Da Costa thinks that the action of guaiacol is somewhat inferior to that of the cold bath as regards promptness, but he has observed that the reduction of temperature which it produces is more lasting. He thinks it preferable to the use of cold baths, particularly in cases where proper appliances for administering the baths are wanting and where from the nature of the case it is particularly objectionable to move the patient. The odor of guaiacol is an objection to its use, and this Dr. Da Costa has not yet been able to overcome. Oil of bergamot has been tried, but the odor of guaiacol overcomes that of the bergamot. Cologne water and oil of sassafras also have been tried, but the best result has been obtained with oil of cloves. Guaiacol is to be rubbed upon the skin of the abdomen or thigh with a camel's-hair brush over a space previously washed with soap and water. The largest amount that has been applied at once in Dr. Da Costa's experience is sixty drops, but from the application of fifty drops he has witnessed effects that cause him to advise that rarely should so large a dose be used. Thirty drops he thinks about the average dose. The guaiacol is to be rubbed in slowly, and the surface to which it is applied need not be uncovered, for the application can be made under the bedclothing, and it is well to cover the surface with a piece of lint and with waxed paper. The dose should be proportionate to the height of the fever; with a temperature of 103° F. it should not exceed twenty minims at the first trial. It is not necessary to rub the guaiacol in, but if friction is not used the effect is neither so rapid nor so complete. The quickest way is to paint the guaiacol on the surface and then rub it in with the hand. Five minutes are enough for the purpose. The sensation, which is not unpleasant, is likened to that produced by the application of menthol. Dr. Da Costa thinks that guaiacol is absorbed by the skin and that it is carried by the circulation to the heat centers, upon which it acts as an antithermic. Apparently its action does not involve the depression that follows the use of antipyrine, phenacetine, and other remedies belonging to the coal-tar products. Moreover, it produces less sweating. In no instance under Dr. Da Costa's observation was there any albumin in the urine or any sign of kidney irritation detected that could be imputed to the use of guaiacol; nevertheless, he advises close examination of the urine in all cases in which the remedy is used.

The Antipyretic Action of External Applications of Cocaine.—At a recent meeting of the *Société des sciences médicales de Lyon*, the proceedings of which are reported in the *Lyon médical* for January 14th, M. Gelley, a hospital interne, made a communication on the antipyretic action of cocaine applied to the skin. In Professor Teisser's service a nurse had been directed to make applications of guaiacol to a number of feverish patients. Having one day used by mistake a solution of cocaine, he reported that he had taken the wrong bottle, but the patients' temperature curves nevertheless showed a reduction. Systematic trials were then begun and M. Teisser was able to observe that a reduction of several degrees was produced if care was taken to make the applications at a time when the temperature was no longer rising. The effect upon the general condition was apparently the same as when guaiacol was painted on. The patient experienced a sensation of repose and well-being, but the course of the disease was not modified. The procedure is the same as with guaiacol. A solution of from three quarters of a grain to a grain and a half of cocaine in a quarter of a teaspoonful of water should be used for each application, and the solution is to be applied to the upper part of the thigh. The antipyretic action of the application of cocaine is analogous to that of the application of guaiacol, but it is a little less energetic. M. Guinard reported that he had repeated these experiments on rabbits. He had resorted to the use of a cocainized ointment, the use of which was easier, but he had satisfied himself that unmedicated ointment was incapable of producing any reduction of temperature. With the cocainized ointment, on the other hand, he had caused a reduction of nearly 2° F. He thought it demonstrated that the medicaments employed acted upon the peripheral nerves.

The Antiseptic Action of Diaphthol.—In the *Revue générale de clinique et de thérapeutique* for January 17th there is a letter in which the writer remarks that M. Guinard has been making a critical and experimental study of diaphthol, which is the orthoquinolinemetasulphonic acid of chemists. It is a powder, fusible at 295° C. and capable of being crystallized in the form of brilliant needles which are colored green by perchloride of iron, and not by contact with metallic iron. By its decomposition it sets oxyquinoline free. With an alkaline solution it forms soluble diaphtholates. The diaphtholate of sodium in a ten-per-cent. solution kills the *Bacillus pyogenes fœtidus* and the *Staphylococcus pyogenes* in thirty or fifty minutes. In a five-per-cent. solution it only weakens their virulence.

Diaphthol is not very poisonous. The urine of animals which have ingested it rarely undergoes ammoniacal fermentation; nevertheless, it becomes putrid. In experiments recently made, it has been ascertained that the liver of these animals is preserved a long time without decomposition; therefore it is a substance which is opposed to certain fermentations. Add to these essential qualities the fact that this remedy is well borne by the gastric and intestinal mucous membranes, and it is easy to understand the interest shown in the use of diaphthol as an internal antiseptic, and especially as an antiseptic of the urinary passages, as it is eliminated free by the urine.

Bernheim's Nutritive Enema.—The *Union médicale* gives the following formula: Concentrated bouillon, ten ounces; pulp of boiled meat, an ounce; Malaga wine, six drachms. Such an enema, administered every three hours, it says, is sufficient to maintain nutrition.

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Lectures and Addresses.

LECTURES ON THE DIAGNOSIS OF ABDOMINAL TUMORS.

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LECTURE II.—NODULAR AND MASSIVE TUMORS OF THE STOMACH.

WE considered in the first lecture the cases in which the tumor was formed by the stomach itself, either in a state of extreme dilatation or extreme contraction. In twenty-one cases of the series nodular growths or diffuse thickening and infiltration were present; in three instances a massive infiltration. And first let me remind you of one or two anatomical facts. The only fixed portion of the stomach is the cardiac orifice, which is covered deeply by the left lobe of the liver, and externally corresponds to the seventh left costal cartilage near the sternum. The organ itself varies much in position with the degree of fullness or emptiness. The pylorus may be in the middle line, but when the organ is distended it is from six to eight centimetres to the right. It is usually, not always, covered by the liver. Fully two thirds of the stomach lie beneath the ribs in the left hypochondrium, and in contact with the abdominal walls are only part of the body and the pyloric region. Practically, however, we find that the organ is often depressed and so enlarged that a much more extended area than usually stated is exposed for palpation. Tumors limited to the cardiac orifice can not be felt at all, even when extensive. Those of the fundus and the posterior wall, and a considerable part of the lesser curvature, can only be felt when of large size. Tumors of a considerable extent of the greater curvature and a large section of the anterior wall are in accessible situations. It is of interest here to note the situation of new growths in the stomach, as determined in thirteen hundred cases analyzed by Professor Welch. The distribution was as follows: Pyloric region, 791; lesser curvature, 148; cardia, 104; posterior wall, 68; the whole or greater part of the stomach, 61; multiple tumors, 45; greater curvature, 34; anterior wall, 30; fundus, 19—so that at least three fifths of all tumors occupy the pyloric region.

The cases which have been under observation may be grouped into tumors at the pyloric region, tumors of the body of the stomach, and massive tumors occupying a very large area of the organ.

(*a*) TUMORS OF THE PYLORIC REGION.—Of the twenty-four cases, there were seventeen with a tumor mass of some size or form to be felt at the distal portion of the organ. In ten of these dilatation of the stomach was present, prominent enough to itself cause a tumor and have been considered in the first lecture.

Before entering upon a description of the cases an important question arises: Is the normal pylorus palpable? It may be answered, I think, in the affirmative, with certain qualifying conditions. The pylorus forms a definite ring-like muscular valve, readily to be seen and felt in the exposed organ. Whether, as has been stated, it relaxes and contracts rhythmically at definite intervals has not been fully determined, but I would remind you of the statement made by Beaumont, in his experiments on the movements of the stomach of St. Martin, that when the thermometer was placed toward the pyloric orifice it was at first firmly grasped, and then, by gentle relaxation, allowed to pass. If the stomach be exposed in a cadaver and a couple of towels laid upon it, on palpation over them the pyloric ring is readily felt. So also, I believe, it may sometimes be detected during life. Though normally covered by the anterior margin of the liver, it is freely exposed in a very considerable number of cases, and when the stomach is depressed or in a state of atony the pyloric ring is always below the edge of the liver. In persons with very thin walls, particularly in cases of enteroptosis in women, palpation in the boundary of the epigastric and umbilical regions may discover a small, transversely placed body, varying in position, with respiration which sometimes gives the impression of a structure alternately in contraction and relaxation. In some cases it may even be rolled beneath the finger. At intervals gas is felt to bubble through it. From the pancreas, which is also sometimes palpable, it is readily distinguished by the alternate relaxation and contraction, and by the bubbling of gas through it. The condition is one of some importance, as it may lead to the suspicion of gastric cancer. Thus I saw with Dr. Salzer, in September, 1892, a woman aged thirty-two, a chronic dyspeptic, but who lately had had very severe symptoms, and had lost rapidly in weight, having fallen from ninety-five to sixty pounds. At the junction of the epigastric and umbilical regions, a little to the left of the middle line, there was a soft, cylindrical structure, which descended with inspiration. Its transverse extent was not more than three or four centimetres. It hardened definitely under palpation. Gas was felt escaping through it. The patient was, of course, extremely emaciated, and the discovery of the tumor, together with the pronounced stomach symptoms, led to a suspicion of malignant disease. The case was subsequently under my care for seven months, and proved to be an extremely obstinate form of anorexia nervosa; but she gained in weight from sixty to a hundred and fifteen pounds, and the improvement continues to date.

I believe that in very thin-walled persons, particularly those with atony of the stomach, the pylorus, *i. e.*, the ring and adjacent part, may sometimes be felt as a narrow, tubular structure, the distinguishing features of which are the alternate relaxation and contraction and the bubbling of gas through it.

Of the seventeen cases, two were instances of cicatricial thickening and stenosis, and in fifteen there was either a cylindrical tumor or a nodular mass.

A tumor-like formation at the pylorus may be due to a number of causes—cicatricial contraction and thickening about an ulcer, hypertrophy of the pylorus, and cancerous growths—all of which conditions may lead to stenosis of the orifice and secondary dilatation of the stomach. Again, the first part of the duodenum and the pylorus may be invaded by growths from contiguous organs, as in a case to be subsequently mentioned, in which the tumor in the pyloric region was caused by invasion of the duodenum by a cancer of the colon. And, lastly, there may be mentioned as a cause of dilatation of the stomach, stenosis of the pylorus by dislocation. Thus adhesions may form between the gall bladder and the pylorus, and this portion of the organ is drawn up and the orifice narrowed. A remarkable instance of the kind was operated upon in the hospital by Dr. Finney in August last.

Tumors of the pylorus are usually, but not always, associated with dilatation; thus there were only four out of the seventeen cases in which the organ was not distended. The cases of pyloric growths or thickening may be grouped as follows:

Thickening and Induration from Healing of an Ulcer.—Two cases come in this category—Case X of the series already given in the first lecture, which presented a very greatly dilated stomach. There was a ridge-like mass, freely movable, to be felt midway between the umbilicus and the right costal margin. The prolonged history of dyspepsia, the moderate wasting, the fact that she had on several occasions vomited blood, and the small size of the pyloric tumor, suggested cicatrization about an ulcer. In the following case gastro-enterostomy was performed by Dr. Finney, and, unfortunately, on the tenth day the patient died of an acute colitis. The nodular tumor was very well defined, particularly after the stomach had been emptied.

CASE XII. *Dilated Stomach; Tumor Mass at the Pylorus; Gastro-enterostomy; Autopsy; Stenosis from Ulcer.*—Mary G., aged twenty-two, colored, admitted on July 29th, complaining of a "gnawing in the stomach" and "vomiting spells." Family history good. Was healthy as a young girl, with the exception of a slight attack of pneumonia about eight years ago, and malaria a year later.

Her present illness began last April with loss of appetite and weakness, and she began to lose flesh. About two months ago she noticed a lump in the abdomen, which she thinks has got larger. About this time she began to vomit at irregular intervals, without any nausea or acid eructations. The attacks gave her relief, and she says the lump seemed smaller after them. The vomitus was copious, greenish in color, and watery. Bowels have been constipated. The feet have swollen sometimes. She has never vomited blood.

Condition on Admission.—Medium-sized, greatly emaciated, lips and mucous membranes pale, tongue presents a whitish fur. Pulse 92, regular, of fair volume. With the exception of a soft systolic murmur at the heart apex, there are no abnormal physical signs in the thoracic organs. The abdomen is symmetrical, not specially distended. In the right hypochondrium, just below the costal margin and opposite to the cartilage of the eighth rib, there is a small nodule, apparently the size of a horse-chestnut, which descends with inspiration and gives the impression of being at the pyloric orifice. It varies somewhat in position and in firmness; thus the day on which I examined her (September 1st) it could by no means be satisfactorily determined, although the day before Dr. Thayer had been able to feel it with the greatest distinctness. On inflating the stomach, the area of gastric tympany was found to be greatly increased, extending from the fifth rib above fully three fingers' breadth below the umbilicus. During great distention of the stomach the nodular mass could not be felt. The material obtained after a test breakfast was mixed with fragments of undigested bread and curds of milk which had been taken the day before. It has a strong sour smell, suggesting butyric acid. The reaction was acid. The congo and tropæolin tests were negative. Uffelman's test gave sharply positive results.

After treatment for some time with washing out the stomach no special benefit followed, and, as the lesion seemed most probably stenosis from ulcer, it was thought advisable to attempt dilatation. Accordingly, Dr. Finney made an exploratory examination and found externally much thickening about the pylorus. He opened the stomach on the anterior wall, and, exploring digitally, found the orifice much narrowed, partly by contraction, partly by polypoid excrescences, several of which were removed. As it was doubtful whether this would be sufficient, a communication was made between the stomach and the jejunum. The patient did very well for ten days, but then vomiting and diarrhœa set in and the latter became severe and she died in the third week after the operation.

The post-mortem showed chronic adhesive peritonitis about the pylorus and over the surface of the liver. The jejunum was very firmly adherent to the anterior wall of the stomach. The tumor mass which had been felt during life was the thickened pylorus. When laid open, a large ulcer was found in the pyloric region with much puckering of the mucosa about it and cicatricial contraction.

Tubular and Small Nodular Tumors at the Pylorus.—Next let me call your attention to four cases which have presented a good deal of difficulty in diagnosis, not as to the existence of the tumors, but as to their nature. In three there was a cylindrical, somewhat tubular-shaped tumor to be felt. In two of them there was evidence of some dilatation of the organ after inflation, but the symptoms in each case were those of chronic dyspepsia, not of extreme dilatation of the stomach. I will first read you the report of the cases.

CASE XIII. *Chronic Dyspepsia; Cylindrical Tumor of the Pylorus.*—Mr. S., aged seventy years, was admitted to Ward C October 6th, complaining of dyspepsia.

The patient has been a dyspeptic ever since 1843, and unless very careful with his diet had fullness and tenderness in the epigastrium. He frequently had very disagreeable feelings after eating, and would vomit or regurgitate the food. In spite of the dyspepsia, he has always been robust and has never been laid up in bed. For the past two years the dyspepsia has been more troublesome and he has frequently had pain after eating. The gastric trouble increased so much that four months ago he had to take peptonized milk. There has been no vomiting, though at any time he could regurgitate the food. For the past ten months he has lost in weight (as much as twenty pounds) and in strength, and has been in very low spirits.

The patient is a well-preserved man for his years, of spare habit, but neither emaciated nor cachectic. The general physical examination is negative. The heart, arteries, and lungs are normal.

Abdomen flat, on palpation soft, no pain. Four centimetres above the navel there is to be felt a ridgelike tumor, which can be rolled beneath the fingers, and which extends six centimetres in the transverse direction. On inspiration it descends slightly. It can be moved up and down; the surface is smooth, and firm pressure is not painful. The point of greatest interest is the remarkable variability in consistence within a few minutes. At times it is firm, hard, and ridgelike, and within a minute it becomes very much softer. Gas can be felt to bubble through it.

There is no glandular enlargement. After a test breakfast sixty cubic centimetres of a light greenish fluid, rather slimy and mucoid, were removed, which gave none of the reactions for free hydrochloric acid.

Patient left hospital on October 22d, somewhat better, but I hear from Dr H. M. Thomas that he died before Christmas.

Case XIV. *Dyspepsia of a Year's Duration; Cylindrical Tumor of Pylorus.*—Bertha N., aged forty-four, admitted to ward G, October 28th, complaining of pain in the epigastric region and loss of appetite.

Father died of tuberculosis; mother, of hæmorrhage from the uterus. She has had two healthy children.

Her present illness is of more than a year's duration. She has had weakness, loss of flesh, and for several months the appetite has been very poor. She gives an account of what she calls spasms, which would appear to be fainting fits at the menstrual period. After eating she has pain and has to lie down, and finds relief by pressure on the abdomen. There has been no vomiting. Lately she has lived principally on milk.

Present Condition.—There is uniform pigmentation of the face except in one or two spots on the cheeks and chin. The general pigment over the surface of the body seems to be somewhat increased, particularly on the abdomen and the arms. She is decidedly emaciated, but the lips are of a red color, and she has not a cachectic look. The tongue is furred. The examination of the thoracic organs is negative. The heart sounds are clear. The superficial arteries are slightly thickened.

The abdomen is flat, somewhat sunken, walls relaxed. In the epigastrium, a little below the ensiform cartilage and extending into the right hypochondriac region, a cylindrical tumor can be felt and rolled beneath the fingers; at intervals gas can be felt to bubble through it. The inflation of the stomach shows the organ to be depressed and somewhat dilated.

An hour after a test breakfast there was very little material obtained. It was acid to litmus paper; no reaction to congo paper. On washing out the stomach, two or three lumps of bread, not digested, were obtained. There was no free hydrochloric acid. Subsequent examinations showed persistence of this ridgelike mass in the epigastrium, but it varied considerably in position; thus on November 4th it could be felt distinctly to the left of the middle line, and even a ridge beneath the skin could be seen in this position to descend on deep inspiration.

The patient left the hospital December 22d, and has not since reported for examination.

Case XV. *Dyspepsia for Several Years; Cylindrical Tumor of the Pylorus.*—M. O., aged fifty-four years, admitted March 10, 1893, complaining of pain in the stomach. Father died at sixty-two of pulmonary tuberculosis, of which disease also one brother died. Mother died at sixty-five of dropsy.

She has always been healthy; married; has three children. Has been subject to dyspepsia for several years.

Last winter she had a great deal of pain in the epigastrium, diarrhœa, and vomiting of a greenish fluid. She was in hospital for eleven weeks, but improved, and from July of last year until January she was perfectly well and could eat anything, but she has been paler and more sallow and has lost in weight.

The present trouble began about four weeks ago with pain in the epigastrium and great tenderness. She has had nausea, but no vomiting. The patient is a small woman, looks ill, complexion very sallow, lips and mucous membranes pale. Tongue is flabby but clean. With the exception of a soft murmur at the apex of the heart, examination of the thoracic organs is negative.

The abdomen is a little full, everywhere tympanitic. There is a marked depression just below the costal margin on both sides; no peristalsis visible. Palpation at first caused so much tenderness that the examination was unsatisfactory; but as she drew a deep breath a small nodular mass could be felt descending beneath the ribs in the parasternal line. In a few days she was somewhat better, and a more thorough examination could be made. In the parasternal line, midway between the costa margin and the navel, there is a cylindrical mass, transversely placed, which can be rolled beneath the fingers. It is extremely sensitive; no flatus is felt passing through it. On deep inspiration, it descends and the fingers can be placed above it so as to hold it down. On percussion, it is resonant. After inflation of the stomach there is no marked dilatation of the organ; no peristalsis is seen, but the tumor is then not so easily palpable.

Ewald's test breakfast, withdrawn fifty minutes afterward, showed about fifty cubic centimetres of grayish, slimy fluid, containing portions of undigested food, and, on testing, no free hydrochloric acid.

Patient was under observation until May 11th. The tumor did not change in any way. The pain lessened and she gained in weight from a hundred and seventeen pounds on admission to a hundred and twenty-five pounds on discharge.

Case XVI. *Nodular Tumor in the Pyloric Region; Dilatation of Stomach.*—J. A. R., Talbot County, Md., seen October 19, 1892, with Dr. Chamberlaine. The patient had been admitted to Ward C, November 17, 1891, with the following history:

For ten months he had had occasional paroxysms of boring pain in the abdomen, coming on usually at night. Six months previous to admission he had noted a small nodular tumor in the abdomen, which he says has gradually become larger. He has had no symptoms of indigestion or special distention of the stomach after eating; has vomited only twice, on both occasions, he thinks, caused by a severe paroxysm of pain. He has lost about fourteen pounds in the past month. He was a man of spare habit, but was not anæmic. A test breakfast, withdrawn an hour after the meal, showed about two ounces of fluid containing small lumps of partly digested food. Free hydrochloric acid was present.

In the abdomen, just above and to the right of the umbilicus, there was felt a rounded tumor about the size of an English walnut, freely movable. On inflation, the stomach tympany extends two fingers' breadth below the umbilicus.

The patient remained in hospital for a couple of weeks; had no special gastric symptoms, gained in weight, and returned to his home November 27th. The case was regarded as one of tumor of the pylorus, and he was told if the trouble increased an operation might be advisable.

October 19, 1892.—Patient examined to-day; has been very much better; entirely free from pain; has had no vomiting; has been taking an ordinary diet; no nausea; no sense of distress after eating. He looks and feels well.

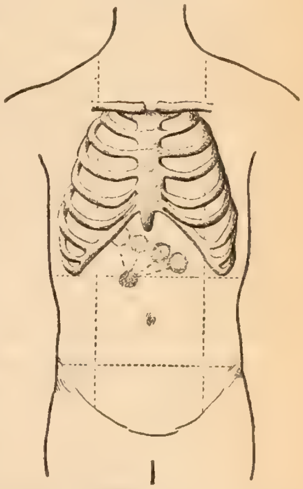

Fig. 13.—Positions into which the tumor could be moved in Case XVI.

The abdomen is a little full in the umbilical region, flat in the epigastric. It is everywhere soft and painless; nothing can be felt in the epigastric region. Midway between the navel and right costal margin there is the same well-defined, firm, hard nodule to be felt, which is now painless. It descends with inspiration and can be moved about in the positions noted in the diagrams. The patient says that it is not nearly so evident when the stomach is empty. It is prominent enough to be seen when the skin is pressed over it. It can be pushed far up under the right costal margin and at first could not be felt, as it was high in this position and only made to descend by deep inspiration. To the left it can be pushed beyond the middle line to a point midway between the navel and the left costal margin. It is very mobile. On inflation of the stomach the lower border was found to descend some distance below the umbilicus—three or four fingers' breadth—while the lesser curvature was almost as low as the umbilicus. When the stomach was inflated the mass could not at first be felt, but afterward was found a trifle more to the right and not apparently quite so superficial as it was before the distention. Nearly a year has elapsed since this patient left the hospital; in that time the nodular tumor has increased but little in size, and the patient's general condition is remarkably good.

In Cases XIII, XIV, and XV the tumor had a definitely cylindrical shape, and in Case XIII there seemed to be no question that the tumor was a thickened pylorus, as marked variations occurred in its consistence and gas could be felt bubbling through it. So also in Case XIV similar features seemed to indicate clearly that the tubular structure, so readily felt, represented in reality the thickened pyloric ring and adjacent part of the stomach. In Case XVI the tumor was rounded, nodular, and very movable. It did not vary in consistence and no gas was felt to bubble through it. It felt very hard and firm. While its local features seemed to indicate definitely that it was a new growth, the general condition of the patient after its existence for eighteen months seemed to be very much against the view that it was cancer. Scirrhus, however, may develop very slowly indeed at the pylorus, and make very slight progress within six months. Thus in Case XVII, on the first admission in September, after an illness of fifteen months' duration, the pyloric tumor constituted a tubular, sausage-like tumor, which could be rolled beneath the finger. I frequently discussed with Dr. Thayer the question whether it was an instance of hypertrophic thickening of the pylorus or a scirrhus growth, and the time element seemed to be in favor of the former; but when the patient returned in April of this year the tumor, which meantime had increased in size, was found to be a scirrhus. The hypertrophic stenosis, with which the annular scirrhus of the pylorus could alone be confounded, occurs in connection with chronic gastritis, with scars of old ulcers, in connection with a cirrhosis in other parts of the stomach or intestines, and sometimes with a general sclerosis of the tissues of the mesentery and peritonæum. It may be impossible, for a time, to give a positive opinion. In either case, however, the condition is serious.

Cases of Large Nodular Growths at the Pylorus.—These constitute a large majority of pyloric tumors. Most of the cases have already been described in the first lecture in connection with the dilatation of the stomach. In some the tumor itself was visible beneath the skin. The following cases are good illustrations of this type of growth. In one the tumor was an annular cancer, which was removed by operation:

Case XVII. *Annular Carcinoma of the Pylorus; Excision of Growth; Death; Autopsy.*—Henry M., aged sixty-one years, laborer, admitted September 30th, complaining of "sour stomach" and vomiting.

No history of hereditary disease. Patient has been healthy and strong, and has had only a few illnesses. He has used alcohol freely, but has not been a heavy drinker.

Present illness began fifteen months ago with an uneasy feeling in the abdomen and churning sensations, which continued until he vomited a watery, very bitter fluid, which sometimes had a greenish-yellow color. At first his appetite and digestion remained good. The uncomfortable feeling after eating gradually increased, and during the past five months, although his appetite has been good and he took his regular meals, vomiting came on about an hour and a half afterward. He has never brought up very large quantities, and pain has never been a prominent feature. He has lost weight rapidly, and within six months has fallen from a hundred and fifty to a hundred and fourteen pounds. The bowels have been very irregular, and he sometimes has had no movements for a week or ten days, and recently has gone as long as sixteen days.

Present Condition.—Large-framed man; much emaciated, particularly in the face. The cheek bones are prominent and the eyes sunken. The mucous membranes are not specially anæmic, and the facies can scarcely be termed cachectic. The emaciation is marked about the thorax; the skin is smooth and clean; superficial lymph glands are not involved. The tongue is a little swollen, indented, and furred.

The abdomen is flat, very much below the level of the costal margin. There is a slight prominence just to the right of the navel, and on deep inspiration a ridgelike mass descends below the point.

On palpation, there can be felt just above and extending to the right of the navel a firm mass which descends on inspiration and can be rolled beneath the fingers, giving one the impression of a tubular, sausage-like tumor. On deep inspiration, it moves down nearly three inches and can be readily held at the navel, and then slips away from beneath the fingers.

The patient was placed upon a careful diet of milk and egg albumin, upon which the nausea disappeared and he became very much more comfortable. The examination on the 17th showed that the elongated mass above referred to had changed in position and lay to the left of and just above the navel.

The liver is not enlarged; the edge of the spleen is not palpable.

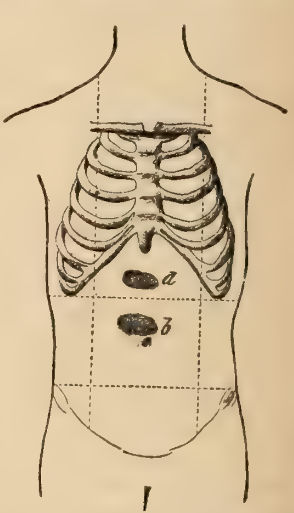

Fig. 14.—*a*, position of the tumor in expiration; *b*, in inspiration.

The patient got dissatisfied with the diet, and left the hospital October 17th, though he seemed to be considerably improved.

April 6, 1893.—Patient returned to the hospital, having had, in the space of nearly six months which has elapsed since the last note, very marked gastric symptoms and occasional attacks of vomiting of large quantities of fluid. He has lost in weight, though he does not look much more emaciated than when he left.

Examination.—Abdomen is scaphoid and the walls held rather rigidly. Between the ensiform cartilage and the navel the solid rounded tumor present in September can be felt in the same position, but it appears definitely to have increased in size. It can be rolled beneath the fingers, and part of it at least varies somewhat in consistence, becoming harder and firmer. The stomach is moderately dilated, and when inflated with gas shows distinct peristalsis, and then the tumor is not nearly so evident.

The advisability of an operation was suggested to the patient in the autumn, but he refused; now he is anxious that one should be performed.

The age, the profound emaciation, and the very evident increase in the size of the tumor suggested cancer rather than cicatricial contraction, with thickening at the pylorus; and as the case was a desperate one, and the man's condition hopeless, the election of operation was left to the patient.

On the 11th Dr. Halsted operated and found a solid annular growth in the pylorus, extending for about seven centimetres, reaching to the orifice, but not extending into the duodenum. As there were no special adhesions and no nodules, he proceeded to resect the growth, which was done successfully. The operation lasted about two hours, and the patient was very much exhausted; he rallied well through the night and seemed very comfortable, but failed rapidly on the 12th and died on the 13th.

Case XVIII. *Cancer of the Stomach; Large Tumor in the Pyloric Region.*—Patrick K., aged twenty eight years, admitted to Ward E, January 3, 1893, complaining of pain in the abdomen. Patient had been an orderly in the hospital in 1889–'91, during which time he was laid up on several occasions—once in December, 1889, with vomiting and diarrhœa; again in April, 1890, with acute gastritis, an attack associated with much pain; and in April, 1891, he had a sharp attack of amygdalitis. A very noticeable feature was the persistent anæmia, and on several occasions in 1889 and 1890 I had examined his blood, which presented all the characters of a secondary anæmia of moderate grade. From his earliest boyhood he has been subject to nose-bleeding, and has always, he says, been pale.

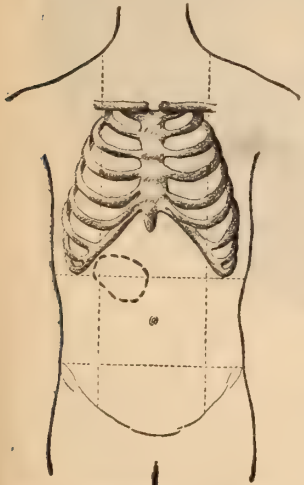
Fig. 15.—Situation of the tumor in Case XVIII.

In October, 1891, he returned to his home in Ireland, and remained fairly well, but was troubled on several occasions with epistaxis. He returned to this country last year. Four months ago he had an attack of pain in the abdomen with vomiting, and these symptoms have persisted ever since. The vomiting is chiefly after taking food, and the pain is also most severe at this time. He has never vomited blood. Bowels have been constipated. He has lost in weight, he thinks, as much as fourteen pounds. He is short of breath on exertion, and when he walks about for any length of time the feet and ankles swell.

Present Condition.—He is very anæmic, but not emaciated; his face is full; blood count, 3,000,000; hæmoglobin, thirty per cent.; eyelids a little puffy; hands very pale; pulse, 87, soft, compressible; radials a little thickened; vessels of neck throb; the heart sounds are loud and clear at the apex, the second very ringing and accentuated at the base; no murmur. The examination of the lungs was negative.

Abdomen full and a little prominent; on palpation, everywhere soft and painless until the right epigastric region is reached. Here, under the costal border in the perasternal line, there is a resistant mass which extends to the right almost as far as the middle line and to the left as far as the nipple line, and below at least six centimetres from the costal border. During a deep inspiration the mass descends and the fingers can then be placed between it and the costal margin. In the middle line in the epigastric region nothing is palpable. There is resonance over the above-described tumor mass. There is no peristalsis apparent; no gurgling to be felt in the mass. After dilatation of the stomach the tympany in the parasternal line was at the seventh rib, and extended two fingers' breadth below the navel. The tumor was pushed far over nearly beyond the nipple line.

A test breakfast withdrawn an hour after gave a hundred and twenty cubic centimetres of thick, dark-brown fluid, containing undigested food and a few shreds of clotted blood. The reaction was acid; there was no reaction with congo paper, nor with the other tests for free hydrochloric acid. Uffelman's test for lactic acid was positive; starch test negative. The spleen was not enlarged; the liver not enlarged. The urine presented no changes.

The patient failed rapidly, became very anæmic, and lost sixteen pounds in weight within a month. The vomiting was very troublesome and intractable. No special change took place in the character of the tumor mass, though as he became thinner it was rather more evident. He died on February 23, 1893. There was no autopsy.

Practically, then, the tumors at the pyloric orifice which we have been studying consisted of cicatricial thickening caused by ulcer, possibly hypertrophic stenosis, annular carcinoma, and large nodular masses. There are one or two points of general interest to which I will here refer. In the first place, the tumor is always larger than you expect from the examination through the abdominal wall. This has to be borne in mind in a discussion on the advisability of operation. It is frequently very variable—well and plainly to be felt to-day, and perhaps scarcely palpable to-morrow—variations which depend a great deal upon the degree of dilatation of the organ, particularly of the portion known as the pyloric pouch, which may cover over and mask even a large pyloric tumor. Examination in the knee-elbow position often gives valuable information as to the relations and positions of a tumor, and should never be omitted in doubtful cases. The value of careful palpation with a view of determining whether gas bubbles through the tumor is of the very greatest importance. The masses are usually firm, hard, and often of a stony consistence; sometimes the nodular masses formed by the glands in the neighborhood of the pylorus can be very plainly felt. A feature in the pyloric tumor which merits special attention is the mobility. I have already referred to it in Case V, in which the solid rounded tumor mass could be pushed beneath the ribs on the right side, far down into the iliac regions, and far over to the left costal border. So also the nodular tumor in Case XVI, which I have just read to you, was extremely movable. I reported a case a few years ago

(*University Medical Magazine*, vol. i, p. 368) which is of great interest in this connection:

> The patient, aged sixty-five years, was admitted to the Philadelphia Hospital, October 14, 1888, with chills and fever. The blood, however, was negative, and it was ascertained that he had had for some weeks distress after eating, and our attention was then directed to a more careful examination of the abdomen. On November 11th the following note was made: Patient is anæmic and emaciated; the abdomen flattened; there is a prominent projection below the left costal border in the parasternal line, reaching nearly to the navel and descending with inspiration. Palpation reveals a firm, hard mass, occupying the left hypochondriac region and the left half of the epigastric region. It is smooth and not painful, and can be moved from side to side to an extent of two or three inches. Percussion over it gives a flat tympanitic note; liver dullness not increased; glands in the groin are double the normal size; vomited matters are brownish in color, acid, but contain no sarcinæ. The tumor changed curiously in position from day to day; at one time it was far over in the right hypochondriac region, entirely beyond the middle line, but more commonly a greater portion of its extent was in the left hypochondriac region. On several occasions it seemed to have disappeared altogether, and only a hard, small mass could be felt far over in the left hypochondrium. Patient sank gradually and died November 20th. When the abdomen was opened no trace of tumor was visible until the stomach was pulled down and to the right. It was then seen that the mass had fallen back into the left hypochondriac region below the ribs, where it was completely covered by the splenic flexure of the colon. The duodenum was curiously elongated and straightened; from the pyloric ring it measured over two inches as a straight tube. The pancreas was also drawn over to the left. The tumor could readily be pushed to occupy the positions in which it was felt during life. It involved the anterior wall of the stomach, which, when opened, presented a large hemispherical mass, involving three fourths of the circumference of the pyloric region and extending to within an inch and a half of the ring. The surface of the mass was ulcerated, and at the base near the greater curvature suppuration had taken place.

(*To be concluded.*)

Original Communications.

A CASE OF RETINITIS PIGMENTOSA,

WITH EXTREME CONTRACTION OF THE VISUAL FIELDS AND WITHOUT NIGHT BLINDNESS.

By F. W. MARLOW, M. D., M. R. C. S. E.,
PROFESSOR OF OPHTHALMOLOGY IN THE UNIVERSITY OF SYRACUSE, N. Y., ETC.

Miss K. L. C., aged twenty years, was brought to me early in February, 1893, by Dr. R. J. Dimon, of Hastings, N. Y., for examination of the eyes.

She stated that her symptoms had been present from her earliest recollection. She can only see what she is looking directly at. In looking at the face of another person five or six feet distant, she sees nothing but the face, neither at the sides nor above and below. While walking she always keeps her eyes on the ground to avoid stumbling. She has no more hesitation in going about at night than in the daytime, and thinks there is no more difference between her day and night vision than is the case with other people. A dull light makes no difference in her ability to read small print.

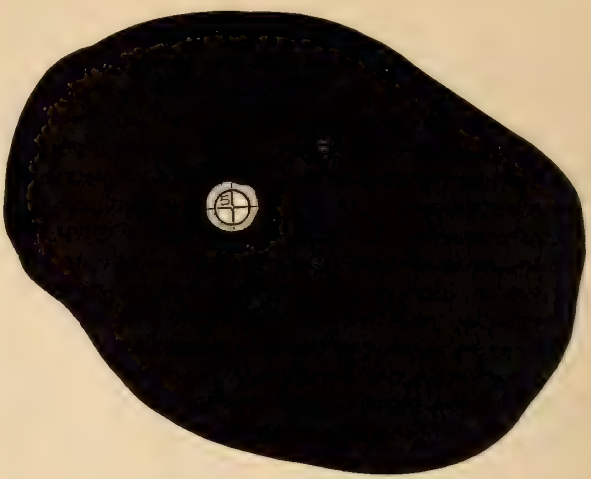

Fig. 1.—Field of vision of right eye.

Examination showed R. V. = $\frac{6}{6}$ partly — not improved by glasses.

L. V. = $\frac{6}{9}$ partly—0·5 D cyl. 90° improves slightly.

Reads 1 Jaeger easily.

Her ability to read small print in dull light was compared with my own in the dark room, with gradually diminished illumination, and showed no relative defect. Careful measurement of the field of vision with the perimeter showed the boundary of that of the right eye to lie between 5° and 7·5° from the fixation point in all directions, that of the left eye lying in most directions at 7·5°, in some slightly within that point. The accompanying cuts show the outlines and size of the fields with tolerable accuracy. The ophthalmoscope reveals the presence of typical retinitis pigmentosa, and the deposits of pigment come within three disc-breadths of the papilla.

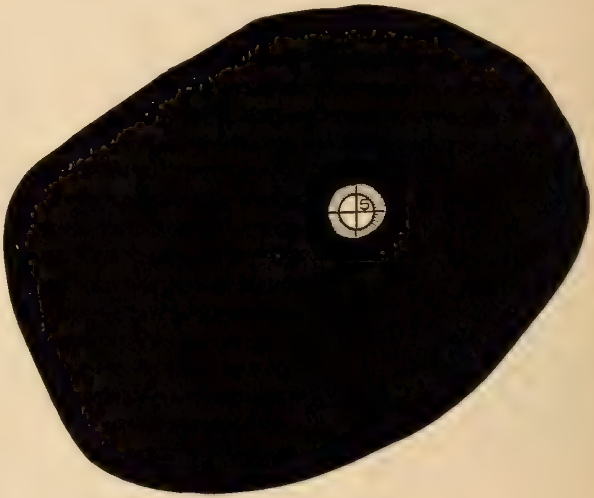

Fig. 2.—Field of vision of left eye.

Her mother thinks the patient's vision unchanged from earliest childhood, but specific statements made by the patient herself leave no doubt that definite, although probably slight, contraction of the fields has taken place within the last few years.

There is nothing in the obtainable history to throw light on the nature of the causation. She had scarlet fever at five years of age, but vision was defective before then, and her mother says that she *always* stumbled over things on the floor. I was unable to learn of any eye trouble in the family. Consanguinity in the parents is out of court, the father being of French, the mother of Dutch-Scotch descent.

The history leaves little doubt that extreme contraction of the visual field was present very early in life, and, taking into consideration the extremely slow progress, it seems probable that the condition had its origin during the intra-uterine period of life.

No treatment was advised. I report the case chiefly on account of the entire absence of the most characteristic symptom of the disease.

401 Montgomery Street.

THE EYE TREATMENT OF EPILEPTICS.

A CRITICAL REVIEW OF CERTAIN FACTORS THAT MAY LEAD TO CONVULSIVE SEIZURES, AND THE TREATMENT OF EPILEPSY WITHOUT DRUGS.

By AMBROSE L. RANNEY, A. M., M. D.

(Concluded from page 113.)

Case XVII.—Miss F., aged seventeen years. Referred to me December 28, 1891.

Family History.—Mother has hypermetropia and astigmatism and esophoria. No hereditary tendency to nervous diseases so far as known.

History of the Case.—When seven years old patient had three convulsions within six months. From that time she had no attacks until February, 1891, when she had another. Since then she has had one in April, one in September, and one in December. These attacks occur at the menstrual period and are always accompanied by nausea.

She has been examined by several physicians and no organic disease found.

Eye Defects.—Patient had $\frac{20}{15}$— vision under atropine and would tolerate no + glass. Her muscular tests on the first visit to the office were: Adduction, 25°; abduction, 8°—; sursumduction—right, 2°; left, 2°; no hyperphoria; esophoria, 3°. Within the next three weeks, after wearing prisms for the manifest esophoria (which were slowly increased in strength), she showed with a 4° esophoria prism: Esophoria, 5°; no hyperphoria; adduction, 33°; abduction, 5°—. In accommodation—esophoria, 10°.

Treatment and Results.—A graduated tenotomy was performed on the right internal rectus with an immediate result of exophoria, 0·25°; abduction, 10°. Six days later she showed: Adduction, 32°; abduction, 8°; no hyperphoria; no exophoria.

During the next three months the patient was seen very frequently, and prisms were tried for a suspected latent esophoria; but no esophoria was discovered. Her tests on May 3, 1892, three months after the operation, were: Adduction, 33°; abduction, 8°; no hyperphoria; esophoria, 0·5°; in accommodation—esophoria, 4°.

The results of treatment in this case were negative. She had one attack in February and another in July. At her last report she was having an attack about once in five months.

Case XVIII.—Miss J., aged twenty-two years. Referred to me October 13, 1890, by Dr. H. J. Dwinell, of Barton, Vermont.

Family History.—Mother has a high degree of hypermetropia. Father has marked exophoria. Paternal grandmother had ptosis. One paternal aunt has hysterical attacks resembling epilepsy. Maternal grandmother died of phthisis.

History of the Case.—When patient was a baby, she had an eye that turned down at times so that the pupil could not be seen. When eight years old she began to have slight "fainting attacks," which steadily grew more frequent and of longer duration. About five years ago she began to have convulsions with contraction of arms, legs, and face, her head drawing to the right, with drooling at the mouth. She was at once put upon bromides and only averaged four severe attacks a year. At present she is not taking bromide and averages one attack a month.

Patient has a severe headache once a month and slight headaches between. She has always been a very nervous child and sleeps very poorly. She complains of a weak back, pain in her left shoulder, and a tickling in her feet and legs, which is very annoying.

Patient is very moody; is unable to do even light work about the house; and never goes out without an attendant.

Eye Defects.—At the first visit patient showed a *crossed diplopia* of 12° and a *vertical diplopia* of 2° with a red glass; vision $\frac{20}{20}$ in each eye. Under atropine vision was $\frac{20}{20}$ with + 1·00 s. Within two days she disclosed: Right hyperphoria, 5° +; exophoria, 18°; abduction, 20°. The other muscular tests could not be obtained on account of the extreme heterophoria.

Treatment and Results.—The treatment of this case consisted solely in graduated tenotomies for the correction of the heterophoria.

An operation was performed upon the right superior rectus; the following day upon the left external rectus; and six days later upon the right external rectus.

Three days after the last operation patient showed: Adduction, 25°; abduction, 5° —; sursumduction—right, 3°; left, 3°; no hyperphoria; exophoria, 3°. Patient was then sent home with instructions to report monthly, and to return in the spring to complete the treatment.

January 12, 1891.—Patient reports only two attacks since October 17, 1890. These were associated with menstruation. She has gained markedly in weight. Last attack December 12th.

March 6, 1891.—Patient's father states that she has had no convulsion since December 12, 1890—nearly three months. She has momentary flashes about a week before menstruation. She is much less moody, goes where she chooses without an attendant, visits places of amusement alone, and friends for a day at a time.

April 18, 1891.—A letter from her father says: "Our daughter has had no return of the disease since last note, not even a symptom or indication of the return of the disease since the last week in February. She sleeps without that movement of the muscles. The "disagreeable smell" which troubled her so much does not return; and she is free from aches and pains. No headache. All this without one drop of medicine since the 1st of October last."

September 24, 1891.—Patient returned to day for further treatment. She reports that only five severe attacks have occurred since last October, the last occurring on August 25th. She has had a number of attacks of *petit mal* since last attack of *grand mal.* Patient shows: Adduction, 23°; abduction, 6°; sursumduction—right, 2°; left, 2°; right hyperphoria, 0·25°; exophoria, 2°.

A full correction of her hypermetropia (+ 1·00 s.) was given for constant wear and her muscles exercised with prisms. In five days she showed: Adduction, 28°; abduction, 6°; sursumduction—right, 2°; left, 2°; no hyperphoria; no exophoria.

November 23, 1891.—A letter from her father says: "Our daughter is doing finely; only one attack or convulsion since last August. Her general health is much better than when in New York. She works every day and has commenced to practice on the piano. We can see a great improvement from what she was before you saw her the first time."

March 12, 1893. — The father states in a letter: "My daughter is much improved since our visit to you in the fall of 1890, and, *since October, 1891, she has had but three convulsions*, and these not as severe as those she had before you saw her."

Case XIX.—Miss D., aged twelve years. Referred to me by Dr. T. J. Martin, of Buffalo, N. Y., on March 15, 1893.

Family History.—No hereditary tendencies to nervous disease so far as known.

History of the Case.—This patient had her first attack while teething, her second when three years old, her third when six years old, and her fourth when ten years old. In 1891 she began to have attacks every six weeks and was put on bromide. She then went eighteen months without an attack, and bromides were stopped, as the attending physician deemed it wise to discontinue them.

During the three months prior to her first visit to me she had four severe attacks of typical epilepsy. She is otherwise a strong, well-developed, healthy child.

Eye Defects. — Under atropine patient showed: O. D. + 2·75 s.; O. S. + 3·25 s.; adduction, 25°; abduction, 6°; sursumduction—right, 2°; left, 2°; no hyperphoria; esophoria, 2°. Within a few hours, under the influence of esophoria prisms, she showed: Esophoria, 7·5°; abduction, 2°.

Treatment and Results.—The following glasses were given for constant wear with instructions to use atropine if ciliary spasm should occur: O. D. + 2·00 s., O. S. + 2·50 s. Graduated tenotomies were performed upon both interni within a week and the patient sent home for a few weeks.

May 5th.—Six weeks after the operation the patient returned for further treatment and her tests were: Adduction, 26°; abduction, 8°; sursumduction—right, 2°; left, 2°; no hyperphoria; esophoria, 0·25°. Her father reports that she has had but one attack (April 25th), which was lighter than usual. Nothing was done at this visit except to exercise her muscles with prisms.

November 27th.—Patient's mother reports that she has had five attacks since last April (a period of over seven months); that the attacks have been lighter, and the interval between attacks much longer, than prior to the eye treatment.

As she seemed to tolerate a stronger spherical glass, she was given: O. D. + 2 50 s., O. S. + 3·00 s. for constant wear. Her muscular tests were: Adduction, 25°; abduction, 8°; sursumduction—right, 3°; left, 3°; no hyperphoria; no exophoria.

Case XX.—Miss D., aged thirty years, single, bank clerk. Referred to me on June 15, 1893, by Dr. Clara E. Gary, of Boston, Mass.

Family History.—Mother has had violent sick headaches. Father has been a victim to "blind" headaches and eye trouble. Headaches are very common in maternal ancestry. One brother and two sisters died at two years of age—one from "water on the brain," one from meningitis, and one in convulsions.

History of the Case.—From two to three years of age the patient "has always had something the matter with her stomach." When thirteen years old she began to have severe sick headaches, and these have continued ever since. Menstruation began at eighteen years of age. Two years later, during menstruation, she had her first epileptic seizure, and during the next five years she had four severe attacks.

Five years ago she had two attacks in one day, and was put on bromides, which she continued to take up to October, 1892. During these five years she had ten severe attacks, the interval between attacks varying from two months to a year.

Since the stoppage of bromides she has had two attacks—one in March and the last one in April. All of her attacks are accompanied by total loss of consciousness, rigidity, frothing of mouth, slight contraction of muscles, and no aura.

Eye Defects.—Under homatropine the patient showed: Hypermetropia, +1·50 s.; adduction, 37°; abduction, 5°; sursumduction—right, 3°; left, 3°; no hyperphoria; esophoria, 9°. After wearing a 4° esophoria prism for twenty-four hours her esophoria was 12°, her abduction dropped to 3°, and she had homonymous diplopia with the red glass.

Treatment and Results.—As the patient was able to remain in New York but three days, she was given +1·00 s. ◯ 2° prism, base out, in each eye for constant wear, and was instructed to return as soon as possible for operation.

October 9, 1893.—Patient returned to-day for further treatment. She shows esophoria of 11° and abduction of 2°—.

Within a few days graduated tenotomies were performed upon both internal recti, and the prisms were removed from her glasses. Directly after the last operation she showed esophoria, 2°; abduction, 8°. One week later her tests were: Adduction, 38°; abduction, 6°; no hyperphoria; esophoria, 2·5°.

November 14, 1893.—Patient writes that she has had no epileptic seizure since last April (a period of over seven months), and has been doing her work at the bank regularly.

Case XXI.—Mr. T., aged twenty-two years, married, photographer. Referred to me on February 17, 1892, by Dr. Elmer Small, of Belfast, Me.

Family History.—The father has severe sick headaches and "dizzy spells." Mother and two brothers are perfectly well. One paternal aunt has severe sick headaches. One paternal uncle has nervous prostration.

History of the Case.—Patient was a very strong child, but had momentary attacks of unconsciousness. When twelve years old he had his first typical epileptic seizure, with the epileptic cry, loss of consciousness, violent convulsive movements, and frothing at the mouth. He was at once put upon bromides, and they have been kept up ever since. He averages about six severe seizures a year; the shortest interval between attacks has been two weeks, and the longest nine months. During the past year he has also had several slight attacks of unconsciousness, lasting only a few seconds. Patient has always had some difficulty in using his eyes, and three years ago consulted Dr. E. E. Holt, of Portland, Me. Dr. Holt prescribed myopic cylinders, and cut both internal recti.

Eye Defects.—Under atropine patient showed +0·50 ◯ + 0·50 c., axis 90°, in each eye; adduction, 40°; abduction, 6°; sursumduction—right, 2°—; left, 2°—; no hyperphoria; esophoria, 2°.

Within a week, by the use of esophoria prisms, the patient showed, while wearing 5° of prism: Esophoria, 7°; adduction, 60°: abduction, 1°.

Treatment and Results.—Patient was given hyperopic cylinders (+0·50 c., axis 90°) for constant wear. Later on this was increased to a full atropine correction.

A graduated tenotomy was performed on the left internal rectus, and five days after the operation he showed: Adduction, 56°; abduction, 8°—; no hyperphoria; esophoria, 1°.

Since the last operation the patient has been seen at frequent intervals, and prisms have been given several times for suspected latent esophoria; but he has never manifested clearly any esophoria, and the prisms have been removed.

His last tests on September 25, 1893, were: Adduction, 50°; abduction, 7°+; no hyperphoria; esophoria, 0·5°.

All bromides were stopped from the time of his first visit (February, 1892). During the first year he had fourteen attacks; but they have been steadily decreasing in number, so that for the past year he has had only six attacks.

This is the exact number that he had when under heavy doses of the bromide salts. The physical condition of this patient has improved greatly since the bromides have been withdrawn.

Case XXII.—Miss R., aged twenty-two years, single, referred to me October 24, 1893.

Family History.—Mother and two maternal aunts died of phthisis. Father has chorea and has had tenotomies performed on one internal rectus for esophoria. Chorea for at least four generations on the paternal side. Paternal grandmother and one great uncle committed suicide. Several cases of insanity among the paternal ancestors.

History of the Case.—When the patient was only a day old she was given an overdose of morphine. This caused convulsions, which lasted for several days. The child again had one convulsion during her second summer while teething, and not long after her eyes became markedly crossed. When five or six years old, tenotomies were performed upon both interni by the old-fashioned method, for the correction of this defect. Although nervous and irritable, she grew large and apparently well, developing early.

In her thirteenth year she began to have "attacks of sickness at the stomach, or perhaps sour risings." These continued to increase in frequency, and four years ago she was placed in care of a physician, who pronounced them attacks of *petit mal.* During the past four years the spasms have changed in character and become extremely frequent. The patient is very regular in her menstruation, but suffers from very annoying chronic constipation.

Eye Defects.—At the first visit patient showed: Vision, O. D. $\frac{20}{50}$ — ; O. S. $\frac{20}{30}$ —, not improved by any glass; left hyperphoria, 5°; esophoria, 7° to 15°; extreme nystagmus when either eye is covered, but only noticeable at times when using both eyes. Her left eye rolled up very markedly when covered, and putting a red glass or the Maddox rod before either eye caused such marked nystagmus that those tests were impossible. I was also unable to determine the strength of her ocular muscles.

A 4° left hyperphoria prism was given and in thirty minutes she showed left hyperphoria of 9°. Under homatropine her vision in either eye was made $\frac{20}{30}$ — by + 1·25 s. Binocular vision $\frac{20}{20}$ —.

Treatment and Results.—The treatment consisted in the correction of her hypermetropia by glasses (+ 1·00 s.) to be worn constantly, and a graduated tenotomy upon the left superior rectus. Immediately after the operation she showed 3° of left hyperphoria. Ten days after the operation she showed: Left hyperphoria, 1°; esophoria, 10° to 14°; and the eye did not roll up when covered. She was then sent home with instructions to report monthly and return later for treatment.

November 13, 1893.—A letter from her father states that she has had six attacks of *petit mal* during the past sixteen days. This is somewhat less than prior to the tenotomy.

The treatment of this case can hardly be considered as more than begun. The heterophoria is so extreme, that until further work is done upon the eye muscles, the nystagmus and the nervous symptoms will undoubtedly persist.

Case XXIII.—Mr. M., aged thirty-one years, single, clergyman, referred to me October 21, 1893, by Dr. A. A. Smith, of New York.

Family History.—Mother had severe neuralgia. Father and three brothers are all living and well. Maternal aunt had epilepsy. One case of insanity in ancestry.

History of the Case.—Patient was well and strong up to eighteen years of age, when he had a "fainting attack." At twenty-four, while in college, he had his first regular epileptic seizure, after a hard night's work, during a class "rush." A few weeks later he had a second attack in presence of a doctor on a train. He fell with the epileptic cry, had marked convulsive movements, frothed at the mouth, was unconscious for twenty minutes, and very sleepy for hours afterward. At that time he was put on heavy doses of bromide and has kept it up pretty constantly ever since.

Three years ago he had attacks from one to three weeks apart, but last year only had four severe attacks. He always has his attacks in the morning and very often on the cars. Looking out of a car window always causes great discomfort.

Eye Defects.—Under homatropine the patient has $\frac{20}{20}$ vision, but tolerates a +0·50 s. His muscular tests at the first visit were: Adduction, 23°; abduction, 4°; sursumduction—right, 2°—; left, 2°—; right hyperphoria, a shade; esophoria, 1°. Within a week, after wearing esophoria prisms, he showed, while wearing 6° of prism: Adduction, 35°; abduction, 0; no hyperphoria; esophoria, 7·5°. *Unconquerable homonymous diplopia* existed when the prisms were removed. Later, a very high degree of latent esophoria disclosed itself.

Treatment and Results.—The treatment of this case consisted of three graduated tenotomies on the internal recti muscles. One on each internus was performed within a week; and two weeks later the right internus was again buttonholed. Between these steps the patient was seen daily; his eye muscles were exercised with prisms; and prisms given as fast as he showed any esophoria.

Five days after the last operation he showed: Adduction, 41°; abduction, 6°+; no hyperphoria; no esophoria. All bromides were stopped on November 8th.

December 2, 1893.—Patient reports that he has had no epileptic attack. His eye tests are the same as last noted.

He was sent home with instructions to render a monthly report for three or four months.

There is reason to believe that some latent esophoria still exists; but I deemed it wise to allow the patient ample time to learn to use his eye muscles in their modified adjustment before I investigated the suspected but entirely latent heterophoria.

On January 3, 1894, a report was received from this patient. He says: "I have been entirely free from any epileptic seizures, and I find my head much relieved when at work. I can speak and write with a facility I have not known for years."

Case XXIV.—Master R., aged nine years, referred to me January 7, 1889, by Dr. J. W. Wright, of New York.

Family History.—Both parents are living and healthy. A brother has severe headaches. Several cases of phthisis and cancer have developed in maternal ancestry. Some phthisis also in paternal ancestry. One paternal and one maternal uncle had epilepsy.

History of the Case.—Patient was a delicate child and was circumcised when eighteen months old for peevishness, crying, and sleeplessness.

In April, 1881, he had a series of epileptic attacks. The next series followed in October, 1881. Both were very severe and several attacks occurred in succession, chloroform being required to control them. Screaming attacks were frequent at night and would last for hours.

The child was at once put upon bromides and did not have another severe attack for a year, but had numerous attacks of *petit mal.* A third series of severe convulsions occurred in October, 1894. He was then put on full doses of bromide and corrosive sublimate and had no severe seizure until March, 1887, but during this time had very frequent attacks of *petit mal.*

In 1885, severe outbreaks of uncontrollable temper occurred; the child could not be trusted with children, and in temper had been known to throw knives, forks, or anything he could lay hands on.

From that time *petit mal* attacks have been very frequent, and he has had a series of severe convulsions in March, 1887, December, 1887, August, 1888, and November, 1888.

He has taken heavy doses of bromides periodically, but they seemed to exert no special influence.

Eye Defects.—Under atropine patient showed: Hypermetropia, O. D. + 0·75; O. S. + 0·50; abduction, 33°; adduction, 6°—; sursumduction—right, 3°; left, 3°; no hyperphoria; esophoria, 6°.

Within a week after wearing esophoria prisms he showed, while wearing a 5° prism: Esophoria, 8°; abduction, 2°—.

Treatment and Results.—On account of the age and peculiar temperament of the child, it was found impossible to operate upon him under cocaine. Not even his nurse, who had great influence over him, could persuade him even to have a solution of cocaine dropped in his eye.

As he showed homonymous diplopia with a red glass and at times as much as 20° of esophoria, it was deemed wise by his attending physician and myself to operate under chloroform. He was put under the anæsthetic with difficulty, and both interni were rather freely divided. Great care was taken to avoid an overcorrection, and, accordingly, the result was not as good as might have been obtained had I followed my customary methods and tested the patient's muscles after each tenotomy.

Two days after the operation the tests showed: Esophoria, 0° to 6°; abduction, 6°.

Three days later the patient had a very *severe convulsion, preceded by a long aura of terror.* This seizure required the administration of chloroform to control it. It was followed by eleven light attacks.

The child began to develop considerable latent esophoria within the next month, and it was becoming evident to my mind that further operative work on his interni would be demanded.

To my great disappointment, the parents then decided to discontinue treatment for a while at least, as even the thought of further tenotomies seemed to greatly disturb the child and his parents.

Under such circumstances very little, if any, benefits could reasonably be expected from the eye treatment up to this point, as the case was one that would undoubtedly require considerable time for the full solution of the eye problems encountered.

I am informed that subsequently the parents placed the child in a private institution in England.

Case XXV.—Miss C., aged fifteen years. Referred to me on April 7, 1892, by Dr. F. H. Olin, of Southbridge, Mass.

Family History.—Mother is delicate with pulmonary trouble. Maternal grandfather died of phthisis. Father has had severe headaches all his life. His mother and all of his brothers also have headaches. No chorea, epilepsy, or insanity in ancestry so far as known.

History of the Case.—Patient had spasms in infancy, which were attributed to indigestion. About four years ago she began to have light attacks of epilepsy in school. In these she had an "aura" and momentary lapses of consciousness, but never fell.

In August, 1891, she had an attack in a store, walked into the street unconsciously, fell in the street, and was carried back into the store. She was at once put upon bromides, as she showed marked indications of another attack the next day.

In September, 1891, she had her second severe fit in a drug store, and was carried home semi-conscious by her family physician. Bromides were pushed for three months and then were stopped for a month.

Mild attacks appeared in January, 1892, and bromides were again commenced.

In March, 1892, she had her third severe attack, followed by another inside of an hour. Both of these were terribly severe.

At present it is a rare thing for her to go a day without a light attack, and she often has several in a day.

All bromides were stopped a week ago.

In other respects the patient is well and strong. She is a remarkably bright girl and an accomplished musician.

Eye Defects.—Under atropine the patient showed: Hypermetropia (+0·50); adduction, 28°; abduction, 4°+; sursumduction—right, 1°+; left, 1°+; right hyperphoria, 0·25°; esophoria, 1°.

After exercise of the muscles and use of prisms for a week, she showed, while wearing 4° prism: Adduction, 45°; abduction, 1°; no hyperphoria; esophoria, 5°. Later she developed considerable latent esophoria and right hyperphoria.

Treatment and Results.—The treatment of this case consisted in the wearing of prisms and a graduated tenotomy upon the left inferior rectus and both internal recti muscles. The esophoria operations were performed within the first month, about two weeks apart. During the next month her muscles were tested almost daily, and esophoria prisms were given for suspected latent trouble; but, her tests being rather uncertain, the prisms were removed and the patient sent home for the summer. At that time she showed adduction, 50°; abduction, 6°+; no hyperphoria; no esophoria.

During these ten weeks she went several times from one to two weeks without any attacks, and would then have several light ones, usually during menstruation. She had no severe attack during this period of ten weeks.

July 28, 1892.—Her mother reports that during the past five weeks she has had nine slight attacks, four of them during menstruation. In none of these was she unconscious.

September 29th.—Patient returned to-day for further treatment, and reports eight light and no severe attacks for the past two months. Her eye tests were taken daily for a week, but, as no esophoria disclosed itself, she was sent home for six weeks. Her tests were: Adduction, 45°; abduction, 5°+; no hyperphoria; no esophoria.

January 10, 1893.—Since last note (twelve weeks ago) the patient has had five severe and fifteen light attacks.

February 16th.—Patient returned to-day for treatment. She began to show some right hyperphoria, and prisms were given to correct it, and increased in strength as fast as she showed any surplus over her glass. Within ten days she showed: Adduction, 43°; abduction, 4°; sursumduction—right, 4°+; left, 0°; right hyperphoria, 3°; esophoria, 0°.

The left inferior rectus was then divided, and six days after the operation she showed: Adduction, 45°; abduction, 5°; sursumduction—right, 1°+; left, 1°+; right hyperphoria, 0·25°; no esophoria.

Prisms were given her for exercising the externi daily, and she was sent home.

April 19th.—Patient's mother reports that she has had five severe and eleven light attacks in the past nine weeks, and that her abduction is 7°.

In November, 1893, her physician visited my office and reported that this patient "was, in his opinion, decidedly better than when under the influence of bromides." She had few severe fits, longer intervals between them, and a very marked decrease in the *petit-mal* attacks had been observed.

Case number.	Date of first examination.	Initials.	Age and condition.	Previous treatment and results.	Refractive errors.			Muscular anomalies.			Ocular treatment employed.	Drugs administered by me.	Number of attacks while taking bromides.	Number of attacks on stopping bromides.	Results of eye treatment	Remarks on case.
					H.	M.	A.	Eso.	Exo.	Hyp.						
1	July 30, 1892.	Mr. B.	26 yrs., married.	Bromides for two months; negative results.	+0·50 +0·50	....	....	8° Additional latent esophoria discovered.	..	..	Three graduated tenotomies upon the interni.	None.	From two to ten daily.	One hundred and six attacks during the first fourteen days.	No attack for more than twelve months.	Patient has been actively engaged as a skilled workman on machinery during the period covered by eye treatment.
2	Sept. 2, 1892.	Mr. F.	27 yrs., single.	Bromides for fifteen years; negative results.	....	.... −0·50	+0·50 −0·50	6° Additional latent heterophoria discovered.	..	1°	Three graduated tenotomies for relief of esophoria and hyperphoria; glasses for constant wear.	None.	Four severe seizures in seven months prior to eye treatment.	....	Only one light attack since first visit (September, 1892).	This patient has used his eyes on an average of six hours per day at bookkeeping; he has entirely recovered from chronic dyspepsia of years' standing.
3	May 5, 1893.	R. G.	10 yrs.	Bromides for a time; negative results.	1·75 1·75 More hypermetropia found later.	....	....	Double convergent strabismus.			Two graduated tenotomies upon the interni; hypermetropic glasses.	None.	Extremely frequent; often during each day.	....	As far as known, only one attack has occurred since the first visit.	This patient has made a remarkable recovery from partial idiocy.
4	Jan., 1886.	Mr. H.	43 yrs., married.	Bromides and other drugs for twenty-four years; negative results.	+2·50 +2·50	....	....	4° Additional latent esophoria discovered.	..	..	Two graduated tenotomies upon the interni; hypermetropic glasses.	None.	About four severe attacks during each year.	....	No attack for about seven years.	This patient has been using his eyes constantly for years without any asthenopia or headache.
5	Mar. 18, 1890.	Mr. H.	24 yrs., single.	Bromides in all possible combinations for three years; negative results.	....	....	+0·50 +4·00 −1·00	11° Additional latent esophoria discovered.	..	..	Two graduated tenotomies upon the interni; full correction of astigmatism by glasses.	None.	Two attacks during the year prior to eye treatment.	Several times as many as when the bromides were given.	Only one slight seizure during the past three years.	The effects of bromides upon the mental condition of this patient were alarming. He has entirely regained his mental and physical health, and has lately married.
6	Nov. 27, 1888.	Mr. S.	19 yrs., single.	Bromides in enormous doses, with chloral, for many years.	+0·50 (scant) +0·50 (scant)	....	....	4° Latent esophoria and hyperphoria disclosed themselves to a high degree.	..	¼°	Graduated tenotomies for esophoria and hyperphoria.	None.	Thirty-four days during the year prior to eye treatment had been attended with a series of convulsions.	This experiment was never deemed safe.	Two years and three months without an attack, and only one slight seizure in nearly three years.	This patient was afflicted with epileptic mania, and was at one time about to be committed as an incurable epileptic to an asylum. He required a room padded with mattresses while his seizures were active.
7	April 6, 1889.	Mr. S.	16 yrs., single.	Bromides at intervals, but in small doses.	+1·00 +1·00	....	....	5° Latent esophoria was disclosed to a very high degree.	..	..	Graduated tenotomies; glasses for reading.	None.	Seizures somewhat irregular; about four a year.	Not in excess of number under bromides.	No attacks for past two years and six months.	The family history of this case shows that eye defects were inherited by the patient. Serious nervous conditions had developed in the father and a brother.
8	Oct. 28, 1892.	Mr. O.	28 yrs., single.	Bromides for three years.	.... 0·50	2·50	−0·50 +0·50	.. Crossed diplopia; hypo-exophoria.	16°	2°	Three graduated tenotomies; full correction of refraction by glasses.	None.	Three attacks during year while under bromides.	....	Not determined; patient returned to the bromides contrary to my advice.	This patient became alarmed because he had some seizures after stopping the bromides, and abandoned the eye treatment. The progress of the eye treatment had been more than satisfactory to me.
9	May 28, 1888.	Miss S.	13 yrs.	Bromides for three years; negative results.	+1·50 +1·75	....	+0·75 +0·75	10° A high degree of latent esophoria disclosed itself later.	..	..	Three graduated tenotomies; glasses for constant wear.	None.	About two severe seizures each month.	Continuous epilepsy that endangered life, within twenty-four hours.	Epileptic seizures somewhat less than when under the influence of bromides; the physical condition of the patient is greatly improved.	This is one of the cases where the marked improvement in the patient is not as clearly shown by the numerical decrease in the epileptic seizures as by the changes in the patient herself. She is physically a different being than when taking bromides.
10	Oct. 22, 1890.	Mr. F.	40 yrs.	Had never taken any bromide salts.	+1·50 +1·50	....	....	6° Homonymous diplopia prior to tenotomies.	..	..	Four graduated tenotomies; spherical glasses for constant wear.	None.	....	Only one severe fit; uncontrollable attacks of nausea accompanied by symptoms of *petit mal*.	No convulsive seizure for over two years; only one attack of nausea during year 1893.	The paroxysms of nausea that formerly lasted a week, and were closely allied to attacks of *petit mal*, have been greatly modified, and are now very infrequent.
11	Mar. 27, 1891.	Mr. B.	22 yrs.	Had taken bromides for years, but had abandoned them for six months prior to eye treatment.	+0·75 +0·75	....	....	5° Latent esophoria existed.	..	..	Two graduated tenotomies upon the interni; glasses for his refractive error.	None.	Frequent severe seizures.	One hundred severe attacks during past six months; twenty-five attacks of *petit mal* often during twenty-four hours.	Epileptic seizures were markedly reduced in number prior to the sudden death of the patient.	This patient discarded his glasses contrary to instructions. He was found dead with a wound on the forehead, supposed to be due to falling upon a stone when seized with an epileptic attack.

Case number.	Date of first examination.	Initials.	Age and condition.	Previous treatment and results.	Refractive errors.	Muscular anomalies.	Ocular treatment employed.	Drugs administered by me.	Number of attacks while taking bromides.	Number of attacks on stopping bromides.	Results of eye treatment.	Remarks on case.
					H. M. A.	Eso. Exo. Hyp.						
12	Mar. 1, 1893.	Mrs. G.	30 yrs., married.	Bromides for three or four years; no benefit derived. Serious mental and physical effects were apparent.	+1·00 .... +0·50 +1·50 .... +0·50	2° .. .. Latent esophoria disclosed itself to a marked degree.	Two graduated tenotomies upon the interni; correction of the refractive errors by glasses.	None.	Paroxysms of continuous epilepsy at intervals that would last from twenty-four to forty-eight hours.	Patient did not dare to abandon bromides until after the second tenotomy.	No attack during the past five months.	Frequent and uncontrollable hysterical attacks that occurred prior to the eye treatment are things of the past. The patient gained twenty-eight pounds in weight within three months after the withdrawal of the bromides. Her mental powers have been perfectly restored.
13	April 8, 1893.	Mrs. W.	30 yrs., married.	Bromides seemed to exert no influence upon the attacks.	Absolute emmetropia (even under atropine).	7° .. .. The esophoria was totally latent.	One graduated tenotomy upon the right internal rectus.	None.	Exact record not kept by family. Several occurred during the first week that I personally controlled the case.	Not materially altered.	No attack for past nine months.	This patient was found to be absolutely free from refractive errors. Her esophoria was also totally latent. The solution of this problem was effected by a judicious use of prismatic glasses.
14	Mar. 2, 1893.	Mr. S.	19 yrs., single.	Bromides for seven years; negative results.	Absolute emmetropia (even under atropine).	7° .. .. The esophoria was almost totally latent.	One graduated tenotomy of right internal rectus.	None.	An attack about every fourteen days.	Withdrawal of bromides for four months did not affect frequency of epileptic attacks.	Patient has passed six months without an attack since the operation; only two attacks in thirteen months.	A terrible accident occurred to this patient. While in a fit he overturned a lamp, and was burned so that his life was despaired of. Since then the eye treatment has been suspended until lately.
15	Sept., 1893.	Mr. P.	26 yrs., single.	Bromides for some years; negative results.	Emmetropia.	7° .. .. Additional latent esophoria.	Three graduated tenotomies upon interni.	None.	Six severe convulsions during the year that preceded the eye treatment.	....	No attack for a period of eleven months during 1893.	This patient has been entirely relieved of chronic constipation of many years' standing (as a result of his improved nervous tone).
16	Mar. 23, 1893.	Mr. H.	18 yrs., single.	Bromides for some years; negative results.	2·50 .... 1·00	Double divergent strabismus; apparently a right hyperphoria also.	Two graduated tenotomies upon the externi; full correction of refractive error by glasses.	None.	A severe convulsion each month; from two to fifteen attacks of *petit mal* daily.	....	Four months without a convulsion; attacks of *petit mal* much less frequent.	The eye conditions of this patient are as yet only partially solved. This case is one of the most difficult cases of heterophoria that I have ever seen.
17	Dec. 28, 1891.	Miss F.	17 yrs., single.	Has never taken the bromide salts.	Absolute emmetropia under atropine.	3° .. .. Some latent esophoria was disclosed.	One graduated tenotomy upon the right internal rectus.	None.	About four severe convulsions during each year.	....	Results negative; patient continues to have attacks every four or five months.	The improvement in the heterophoria was marked in this patient, but no material change in the frequency of the attacks followed.
18	Oct. 13, 1890.	Miss J.	22 yrs., single.	Bromides for years; attacks not arrested, but decreased in number.	1·00 .... 1·00	.. 18° 5°+ Crossed and vertical diplopia.	Graduated tenotomies upon both externi and superior rectus; full correction of refraction by glasses.	None.	About four severe attacks each year.	About one severe attack each month.	Only three attacks in eighteen months.	This patient has been enabled to dispense with a constant attendant. She goes to places of amusement, balls, etc., and is regarded as an invalid no longer by her parents or friends.
19	Mar. 15, 1893.	Miss D.	12 yrs.	Bromides for eighteen months; physical results unsatisfactory.	2·75 .... 3·25	2° .. .. A high degree of latent esophoria disclosed itself.	Graduated tenotomies upon the interni; glasses for constant wear.	None.	Attacks arrested for eighteen months at one time.	Four severe convulsions in twelve weeks prior to eye treatment.	Five attacks during past eight months; seizures much less severe than formerly.	This patient has not yet been observed for a sufficient time to speak definitely about results. Her parents and physician regard her as very much improved by eye treatment.
20	June 15, 1893.	Miss D.	30 yrs., single.	Bromides for over five years.	1·50 .... 1·50	9° .. .. A high degree of latent esophoria.	Two graduated tenotomies upon internal recti; +1·00 s. glass for constant wear.	None.	Ten severe seizures in five years.	Two severe fits one month apart.	No epileptic seizure for over seven months.	This patient has steadily filled a clerical position that involved a constant use of the eyes during the period of treatment in my office.
21	Feb. 17, 1892.	Mr. T.	22 yrs., married.	Bromides in heavy doses for past ten years.	0·50 .... +0·50 0·50 .... +0·50	7° .. .. This patient had shown an approach to double convergent squint prior to my tests.	Both interni had been operated upon prior to my examination of the patient. One graduated tenotomy was performed by me.	None.	An average of six severe fits each year, with some *petit-mal* attacks.	....	During the past year the patient has had six seizures.	The eye treatment seems to have accomplished as much as large doses of bromides did thus far; apparently the epileptic attacks are growing still less frequent. The physical condition of the patient is very much improved.

Case number.	Date of first examination.	Initials.	Age and condition.	Previous treatment and results.	Refractive errors.			Muscular anomalies.			Ocular treatment employed.	Drugs administered by me.	Number of attacks while taking bromides.	Number of attacks on stopping bromides.	Results of eye treatment.	Remarks on case.
					H.	M.	A.	Eso.	Exo.	Hyp.						
22	Oct. 24, 1893.	Miss R.	22 yrs., single.	....	1·25 1·25	....	....	15° Extreme nystagmus when either eye is covered.	..	9°	Graduated tenotomy upon left superior rectus.	None.	....	Almost daily attacks of *petit mal.*	Attacks less than before operation.	The treatment of this case has not progressed far enough to justify any marked improvement in the epileptic seizures. Extreme heterophoria still remains.
23	Oct. 21, 1893.	Mr. M.	31 yrs., single.	Bromides for past twelve years.	0·50 (scant) 0·50 (scant)	....	....	7½° Unconquerable diplopia.	..	..	Three graduated tenotomies upon the interni.	None.	Four severe fits during past year.	Has never dared to abandon the bromides.	No attack since the first graduated tenotomy (nearly four months).	In spite of the sudden withdrawal of the bromides, the patient reports a very decided improvement in his general physical condition.
24	Jan. 7, 1889.	Master R.	9 yrs.	Bromides in large doses at intervals for some years; negative results.	0·50 0·50	....	....	6° Additional latent esophoria.	..	..	Two graduated tenotomies upon the interni, under chloroform.	None.	A series of convulsive seizures at irregular intervals. Very frequent attacks of *petit mal* between the convulsive outbreaks.	Not tried.	Negative.	The patient was withdrawn from my care before the results of eye treatment could be determined. Marked latent heterophoria remained uncorrected.
25	April 7, 1892.	Miss C.	15 yrs.	Bromides for six months; results not satisfactory.	0·50 0·50	....	....	6° Considerable latent esophoria and hyperphoria existed.	..	¼°	Graduated tenotomies upon both internal recti and left inferior rectus.	None.	Very severe seizures at irregular intervals. *Petit-mal* attacks very frequent, often several during each day.	....	This patient has about as many attacks as when under influence of bromides.	The correction of the existing heterophoria in this case is probably imperfect. Further operative work will doubtless have to be done before orthophoria is established.

INFLUENZA (LA GRIPPE).

By EDWIN R. MAXSON, M. D., A. M., LL. D.,
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Nature.—This disease, now so prevalent, the result, perhaps, of a poison originally generated by the decomposition of animal and vegetable matters in the inundated regions of China, and intensified possibly by exhalations from the marshes and hovels of squalid poverty in Russia, has had its run around the world.

Whatever may have been the origin of the microbe which causes influenza (*la grippe*), it now appears to be generated or prevalent the world over, the disease increasing in intensity from year to year, and becoming more generally prevalent and complicated.

The poison, wherever generated, is evidently one of more than ordinary persistence and considerable virulence. For, if not destroyed early in any case, the tendency is to derange, in turn, the various vital and voluntary functions. And though the poison may doubtless be introduced through the respiratory and digestive mucous membranes, in the main, it evidently spends its early influence upon the cerebro-spinal system, and especially the base of the brain, medulla, and cervical spinal cord, from which, as a center, through the cerebro-spinal and ganglionic nerves, the complications in this disease arise.

When the brain more especially suffers, intense pain, delirium, intolerance of light, and mania may follow in quick succession, involving perhaps the eye, but more frequently, as appears, the internal ear of one or both sides, constituting Menière's disease, irritative or destructive.

In cases in which the tonsils become more especially involved, the pain and swelling may be slight, or considerable, if not early controlled.

Perhaps more frequently the thoracic structures, and especially the bronchial mucous membranes, may take on the principal local diseased condition; less frequently the lung tissues, pleura, pericardium, and heart muscle, or endocardium, with a rapid development of the symptoms pertaining to each. When it is the heart muscle which is more especially affected, it may be an exalted or depressed derangement, inflammatory or functional, especially in persons addicted to the use of tobacco, a notoriously frequent cause of heart failure, as is well known.

Gastric inflammation, acute or chronic, appears to be an increasing feature of influenza (*la grippe*) not early controlled, and may constitute an early condition of a grave character, more especially of late.

Such, then, may constitute the conditions in this disease when fully developed, attended with a coated tongue and the usual symptoms belonging to each, with an utter loss of appetite in all cases, the premonitory symptoms being those of a common cold and a lame neck.

It must be apparent to all acquainted with this disease that decided early treatment is of great importance in order to avoid the complications so liable to arise if not arrested early. And as patients undergoing the premonitory symptoms so generally believe that they have only a "cold coming on," it is well to inquire if they retain an appetite; and, if not, to remind them that a cold rarely or never destroys the appetite.

Then they may be convinced of the necessity of using means to arrest the disease before complications arise.

And, if so, the disease should be arrested, usually within five days, according to my observation in a great number of cases since it has prevailed in this region. But when complications arise from neglect or inefficient treatment more time may be required, depending upon the seat and nature of the complications. But it is my opinion that cases of any age should generally recover under judicious treatment timely administered.

Treatment.—I give to adults two grains (thirteen centigrammes) of sulphocarbolate of sodium every six hours—at six, twelve, six, and twelve o'clock—as an antiseptic, and with it generally two drops (0·06 c. c.) of tincture of nux vomica as a tonic and to aid digestion. Alternating with this—at nine, three, nine, and three o'clock—I give as a tonic to adults two grains (thirteen centigrammes) of cinchonidine, suspended in rain water and sometimes dissolved by an acid, or tincture of chloride of iron, and proportional doses to children, according to the age. And these three drugs are continued during and for several days after all symptoms of the disease have disappeared, to destroy the poison as fast as the spores germinate, for I do not believe the spores (seeds) before germinating can generally be destroyed by safe means.

At the very commencement I give to adults a three-grain improved cathartic pill, less for children, usually at evening, till the tongue becomes clean; and each day, from the first, a warm footbath is directed once or twice, according to the fever developed. Hot toast water with milk only is directed, except at mealtimes, when with toast and, if admissible, egg, hot weak tea is allowed to those accustomed to its use.

For the lameness in the back of the neck, which I have generally found a primary symptom, if of sufficient severity to require attention, a wet or dry cup will usually afford immediate relief, applied high to the back of the neck, relieving also the head if aching, as is often the case, with great severity, attended possibly with delirium or mania.

When there is bronchial or any pulmonary irritation, with a cough, I give every six hours with the cinchonidine to adults five grains (thirty-three centigrammes) of Squibb's chloride of ammonium, dissolved in half an ounce (fifteen cubic centimetres) of syrup or water, proportionally less for children, and continue it while there is any bronchial or pulmonary disease of any kind remaining. Sinapisms, hot, are also used once or twice daily. And when pneumonia, pleurisy, pericarditis, or carditis occurs, cups, wet or dry, are applied over the seat of the inflammation and along the corresponding side of the spine opposite, and repeated if necessary, and followed by blisters if required, over the inflamed part.

In cases in which the structures of the internal ear or of the eye become involved, blisters back of the ears, to the back of the neck, and temples may be required and perhaps repeated.

In gastric complications, if sinapisms fail to subdue the inflammation, cups or blisters may be required.

When amygdalitis is a complication a flannel, folded, should be placed loosely around the neck, and a gargle made by dissolving half an ounce (fifteen grammes) of chloride of ammonium in a pint (480 c. c.) of water, three parts, and vinegar, one part, may be used after each meal and mornings and evenings till the inflammation is subdued.

Later, should the fauces remain irritable, a gargle made by dissolving a teaspoonful each of alum and borax in half a pint (240 c. c.) of sage tea, sweetened, may be substituted and used mornings and evenings while needed.

Having thus subdued the complications and directed a continuance of the antiseptic, nux vomica, and cinchonidine for several days after all the symptoms have subsided, in gradually diminished doses for aged people, it may be well to direct a cold infusion of calumba root, in tablespoonful doses, before meals, till the appetite is fully recovered.

818 Madison Street.

REPORT OF TEN CASES OF
SUPRAVAGINAL HYSTERECTOMY FOR FIBROIDS OF THE UTERUS.

By CHARLES S. HAMILTON, A. B., M. D.,
COLUMBUS, OHIO,

The writer wishes to report all of his cases of supravaginal hysterectomy for fibroids. It will be seen from the tabulated statement that the tumors varied in size from fifteen pounds downward. All the patients recovered from the operation. One (in Case II) died of organic heart disease four months later.

Nothing has been learned of the patient in Case I since her discharge from the hospital. The appendages were removed when seriously diseased or when their ablation greatly simplified the operation. In young subjects with sound appendages a tube and ovary were left to minimize the disturbance of the nervous system. In women approaching the climacteric, or having already entered upon it, the treatment of these organs was determined by their relation to the growth and the diseased appearances that they manifested. The stump was secured extraperitoneally with elastic ligature and fixation pins, after tying the whole or a portion of the broad ligaments. The constrictor was carried both above and below the pins to prevent its slipping either up or down on the pedicle. In the first cases the peritonæum was stitched around the stump. This line of sutures is deeply located, sometimes difficult to insert, and may become septic from the stump and lead to infection of intra abdominal ligatures. If this happens, a persistent sinus results. Therefore in several of the more recent operations the peritonæum was carefully coaptated to the uterine structure without sutures with satisfactory results.

When the tumor had been cut away a saturated solution of chloride of zinc, pure carbolic acid, or the cautery was applied to the pedicle and exposed cervical mucous membrane. Gauze was then placed about it in order to isolate it from the abdominal wound. Ordinarily the tissue included by the elastic ligature separated or was ready to be removed with scissors on the tenth day.

In only one case was there any suppuration about the pedicle.

Convalescence was comparatively uneventful and painless in all the cases, with the exception of Case VIII, in which there was an attack of peritonitis. The indications for operation are sufficiently set forth in the accompanying table. In one instance repeated curettings and packing of the endometrium with iodoform gauze might have relieved the patient in a measure, buf, having suffered long, she preferred hysterectomy with sure relief.

Case.	Age, color, etc.	Date of operation.	Physician.	Duration of convalescence.	What was removed.	Size of tumor.	Indications for operation.	Complications.	Drainage.	Present condition.	Remarks.
1	23, negress, single.	August, 1891, Mount Carmel Hospital.	....	4 weeks.	Tumor, body of uterus, appendages; left pyosalpinx.	Child's head.	Impossibility of replacing uterus, pain, inability to earn living.	Immovable prolapsed uterus, too large for vaginal hysterectomy.	None.	History unknown after discharge from hospital.	
2	50, housewife.	September, 1891, home.	Dr. Watkins.	10 weeks.	Tumor, uterus, and appendages.	Œdematous myoma, fifteen pounds.	Size of tumor, patient bedridden, death imminent.	Adhesions to abdominal wall, bladder, omentum, and intestines; organic heart disease, purulent endometritis.	Glass drain.	Died suddenly of heart failure four months after operation.	Unsuccessful attempt to remove appendages had been made two years before; very vascular tumor.
3	46, single.	September, 1891, hospital.	Dr. Clouse.	7 weeks.	Tumor with uterus, cystic ovaries, tubes.	Tumor extending to a point two inches above umbilicus.	Tumor growing, menorrhagia.	None.	None.	Well and strong.	
4	35, housewife.	November, 1891, hospital.	Husband.	4 weeks.	Tumor, uterus, and appendages; one ovary cystic.	Small myoma, suitable for removal of appendages; hysterectomy preferred.	An invalid from profuse menorrhagia and pain.	None.	None.	Small ventral hernia.	
5	29, housewife.	November, 1891, hospital.	Dr. Carpenter.	6 weeks.	Tumor and uterus, with appendages of one side.	Four pounds and a half.	Tumor growing, health seriously impaired.	None.	None.	Well.	Sinus, closing six months after operation.
6	35, negress, married.	June, 1892, hospital.	....	4¼ weeks.	Tumor and uterus.	Child's head.	Pain and menorrhagia, patient confined to bed during half the month.	None.	None.	Well.	
7	38, housewife.	April, 1892, hospital.	Dr. Ferguson.	6 weeks.	Tumor, uterus, and appendages.	Size of a cocoanut.	Menorrhagia and pain.	None.	None.	Patient a neurasthenic before and after operation.	Neurotic disturbances unaffected by operation.
8	35, single.	January, 1893, hospital.	Dr. Custer.	6 weeks.	Tumor, uterus, and appendages of left side.	Multiple myomata, size of two fists.	Pain, recurrent attacks of pelvic peritonitis, inability to work.	Adhesions.	None.	Well.	Peritonitis yielding to calomel and salines on fourth day.
9	35, negress, single.	June, 1893, hospital.	....	5 weeks.	Tumor, uterus, and appendages.	Seven pounds and a half.	Tumor rapidly growing.	None.	None.	Well.	Sinus closed seven weeks after operation.
10	49, widow, seamstress.	October, 1893, hospital.	Dr. Carpenter.	6 weeks.	Tumor, uterus, and appendages.	Six pounds.	Tumor growin.	None.	None.	Well.	

VARIETIES OF SYMPTOMS IN HYPERMETROPIA, WITH AND WITHOUT ASTIGMATISM.

EXAMINATIONS UNDER MYDRIASIS.

By MARY E. HENNESSY, M. D.

CASE I. *High Degrees of Hypermetropia and Hypermetropic Astigmatism, mostly Latent.*—Emma R., aged twenty-five years, a delicate, tuberculous subject, was sent to the Manhattan Eye and Ear Hospital to consult Dr. Webster October 25, 1893. She complained of: 1. Indistinct vision. 2. Constant frontal headache. 3. Tired eyes. 4. Being obliged to hold the page inconveniently near the face in order to read print.

There was no conjunctival congestion, the brow was without furrows, and the palpebral fissures were very wide, giving the eyes a staring expression. The ophthalmoscope showed transparent media and normal fundi. Refraction, 6·50 dioptres, hyperopic in the vertical, and three dioptres in the horizontal meridian.

Javal's ophthalmometer showed 4·50 dioptres of astigmatism *with* the *rule*—*i. e.*, axis 90° or 180°, each eye.

Examination of the extrinsic ocular muscles proved them to be in normal condition—*i. e.*: 1. Orthophoria. 2. Adduction, 14°. 3. Abduction, 8°. 4. Sursumduction—R., 2°; L., 2°. Vision = $\frac{20}{100}$, each eye, without a glass. Vision = $\frac{20}{70}$ with + 2·75 D. cyl. axis 90°, each eye. In addition to this cylindrical glass she accepted + 1·25 D., each eye, but vision was not improved by it. In this case almost the whole amount of the hypermetropia was concealed or latent. The mechanism of accommodation was thoroughly paralyzed by instillations of sulphate of atropine, and three days later, October 28th, examination with the test glasses gave the following result:

Vision = $\frac{10}{200}$: $\frac{20}{50}$+ with + 6 D. combined with + 4·50 D. cyl. axis 90°, each eye.

While the mydriatic controlled accommodation, the following glasses were ordered to be put on at once and worn constantly: + 4 D. $\frown$ + 4 D. cyl. axis 90°.

Thus the glasses selected for her corrected two thirds of the total hypermetropia, and all but half a dioptre of the total amount of astigmatism. As the effects of the mydriatic wore away, the eyes gradually became accustomed to the high degree of correcting glasses.

She was requested to return in ten days, which she did, November 8th. Vision was then $\frac{20}{40}$ + with her glasses, and she read Jaeger No. 1, which is the smallest test type, at from eight to sixteen inches with ease. She was asked to return again in a month, and was then found to have improved since her last visit. Vision = $\frac{20}{30}$ + with her glasses. All her asthenopic symptoms had disappeared. Her countenance was expressive of brightness and contentment; she declared her health had greatly improved. She felt that her education had but just begun. Her glasses continue to give satisfaction, and it may be reasonably expected that her acuity of vision will be considerably increased in course of time.

The foregoing case, with so many asthenopic symptoms, presents a marked contrast with

Case II. *Hypermetropia for the most part Manifest.*—Aaron S., aged twenty-one years, was sent to me by his employer in July, 1893, with the request that I would "attend to his eyes for near-sightedness." He presented a smiling face, with clear, bright-looking eyes. To my question as to how he complained he cheerfully replied: "Why, I do not complain at all! My eyes give me no trouble; I never had a pain in my eyes or head in all my life. It is true that I am near sighted, but I have tried near-sighted glasses, and I can see better without them. I wish I might be excused from having my eyes examined, but my boss is so kind I suppose I must."

It was very reluctantly that he submitted to the examination, which revealed the following: Vision = $\frac{20}{200}$, each eye. He read Jaeger No. 3 at three inches and a half. There was no astigmatism. The usual test for the muscles showed them to be in perfect equilibrium. The ophthalmoscope showed *ten* dioptres of hypermetropia. Vision was brought up from $\frac{20}{200}$ to $\frac{20}{50}$ + with + 6·50 D., each eye. With these glasses he also read Jaeger No. 1 at from seven to eighteen inches.

If we could have used atropine in this case, and allowed him to recover from the effects while wearing his glasses, we could have given him a stronger correction; as it was, he could receive only the amount for the manifest hypermetropia, + 6·50 D. being the strongest glasses with which he could obtain distinct vision. They were ordered for constant use, and the patient was requested to return occasionally to report his condition. He came to me in November, 1893. His vision then was $\frac{20}{40}$ — with his glasses; and, as he was comfortable and his employer reported him much more useful, industrious, and ambitious than formerly, it was not necessary to change the glasses, and he will continue wearing them unless a change should be indicated later. He was as enthusiastic in his praise of the improved condition of his eyes as he had before been unwilling to have anything done.

Case III. *A Small Amount of Hypermetropia that gave a Large Amount of Disturbance; Correction by Glasses.*—Ned H., aged thirteen, a healthy, robust schoolboy, was brought to me by his father in July, 1893. He complained so much of headache that had resisted all kinds of medication that the parents had begun to fear his brain was unhealthy.

One physician questioned him as to the locality of the pain, and elicited the facts that it was always confined to the forehead, was most severe over the brows, and grew worse in the afternoon of each day. The doctor correctly pronounced it due to eye-strain, and advised the parents to have a careful examination of the eyes.

When he came to me I found the conjunctivæ congested, and tears gathered in the eyes whenever he looked steadily at any object. The ophthalmoscope showed a normal condition of the media and fundi. Refraction about $\frac{1}{2}$ D. hypermetropia; no astigmatism. The eyes were alike in every particular. Vision = $\frac{20}{15}$ +; he *accepted no glass.*

Spasm of accommodation being suspected, the boy's eyes were put under the relaxing effects of atropine, and at the end of a week the examination was repeated. Vision = $\frac{20}{20}$ + : $\frac{20}{10}$ with + 0·75 D., each eye.

His total hypermetropia was therefore less than one dioptre; yet this proved sufficient to demand relief, because he was a "lover of books." This trifling amount of hyperopia produced fatigue in eyes used so much for near work.

He was ordered what he accepted after atropine had ceased to paralyze the accommodation, that being in this case + 0·50 D., each eye, for constant use. As the patient lived out of town some ninety miles, his father was requested to write of the lad's condition in a month. The report was: "Ned says the glasses tire his eyes."

He was then advised to wear them only for reading and studying till I saw him again, which was three months later. He was much improved, but still had some headache when not wearing glasses, and found that he could read without fatigue or headache with his glasses. He had grown used to the glasses. He was ordered to wear them constantly till the following summer vacation, when he will probably be able to leave them off. I saw the boy after he had worn them constantly for three months and found that he had had in that time neither headache nor tired eyes. No asthenopic symptom remained; he was made comfortable by this correction.

Case IV.—*Hypermetropia producing Blepharitis Marginalis as the Only Symptom.*—Mabel T., aged eleven years, a schoolmate of the patient in Case III, was brought to me at the same time by the advice of the same physician. She was a delicate girl, whose parents had both died of phthisis. She had had "red eyelids since she commenced going to school," was the history given by her aunt. No other symptom could be discovered. The margins of both upper and lower lids were red, thickened, and covered with yellow crusts. The child was sometimes avoided by other children because of the appearance of her eyes. R. vision = $\frac{20}{15}$+; accepted no glass. L. vision = $\frac{20}{15}$ —; accepted no glass.

The ophthalmoscope showed a normal condition of the media and fundi. Refraction of the right eye, + 1·25 D.; of the left eye, + 1·50 D. No astigmatism. Accommodation being overcome by atropine, vision = R., $\frac{20}{30}$: $\frac{20}{10}$— w. + 1·25 D. L., $\frac{20}{30}$—: $\frac{20}{10}$— w. + 1·50 D.

The following correcting glasses were ordered to be put on while the atropine controlled accommodation, and worn constantly: Right eye, + 0·75 D.; left eye, + 1 D. The lids were bathed with borax water (ʒ j to Oj) till the scaly crusts were removed, after which the following ointment was used every night and morning for two weeks: ℞ Powdered yellow oxide of mercury, gr. xvj; vaseline, ℥ j.

She wore these glasses with comfort, and the inflammation of the margins of the lids entirely disappeared, and they remained well for four months, when they again became somewhat reddened. As a return of the objectionable condition was feared, the child was promptly brought to me for advice. This was in November, 1893. I found she then accepted, *in addition* to the glasses she was wearing, $\frac{1}{4}$ D., each eye. I then ordered for the right eye + 1 D., for the left + 1·25 D. No treatment of the lids was employed. After she had worn the stronger glasses a week the redness disappeared, and now, at the end of four months, the lids continue in a healthy condition.

Case V. *Only One Third of the Total Hypermetropia Manifest; Multiplicity of Subjective Symptoms.*—Mrs. E. E., aged twenty-nine years, a healthy, strong woman, came to me in January, 1894, declaring that she "must have some dreadful disease of the eyes." She complained of: 1. Very indistinct vision. 2. Being unable to read by gaslight. 3. Frontal headache and pain in the eyeballs. 4. Mental confusion upon trying to distinguish objects. 5. Insomnia, that she was certain was caused by the condition of her eyes.

She had always had poor vision; she remembers that when she was a little child at school she had difficulty in distinguishing characters upon the blackboard, and in reading, the letters often ran together, and she would frequently stop at that time and rub her eyes, finding that gave some relief and for a brief time enabled her to see print more clearly.

In the early part of December, 1893, she had an attack of influenza, and since that time her vision and her headaches have been decidedly worse. She was extremely nervous.

Right, vision = $\frac{20}{100}$: $\frac{20}{50}$ — w + 2 D. combined with + 0·75 D. cyl. axis 90°. Left, vision = $\frac{20}{70}$: $\frac{20}{50}$ w. + 2 D.

The ophthalmoscope showed a normal condition of the media and fundi. Refraction: Right eye, + 6 D., with + 1 D. astigmatism; left eye, + 6 D.

Examination of the Ocular Muscles.—1. Hyperphoria, R. 1·5°. 2. Esophoria, 2°. 3. Adduction, 16°. 4. Abduction, 6°. 5. Sursumduction—R. 2·5°, L. 1°.

This patient's eyes were put under the controlling effect of atropine, and three days later the following result was obtained:

R. V. = $\frac{4}{200}$: $\frac{20}{30}$+ with + 6·50 D. combined with + 1·25 D. cyl. axis 60°. L. V. = $\frac{6}{200}$: $\frac{20}{30}$+ with + 6·50 D.

Before accommodation was restored the following glasses were ordered for constant use: R., + 4·50 D. $\bigcirc$ + 1·25 D. cyl. axis 90°. L., + 4·50 D.

After the mydriatic had ceased its effects vision was found to be: R. = $\frac{20}{100}$, without a glass. L. = $\frac{20}{70}$, without a glass. Each eye, with a glass, = $\frac{22}{20}$ +. The two eyes together, with glasses, = $\frac{20}{15}$. With these glasses she read Jaeger No. 1 at from seven to eighteen inches. Without her glasses she could read only Jaeger No. 3, and with pain and difficulty.

She was requested to return in a month to report her condition.

In February, 1894, she returned and stated that all her asthenopic symptoms had disappeared. All objects, whether near or distant, were plainly seen. Her glasses continue to give her satisfaction and comfort. She even slept well, whether she read in the evening or did not use her eyes for near work.

This patient had all her life suffered from this high degree of hypermetropia, and this was her first sense of relief. She presented a marked contrast to the patient in Case II, and in some respects to the one in Case I. Her forehead was deeply furrowed with vertical lines between the brows, the palpebral fissures were contracted, and she had an anxious, troubled countenance, as if uncertain what to do. All this facial expression changed as her other asthenopic symptoms disappeared under the proper correcting glasses.

Case VI. *Two Thirds of the Total Hypermetropia Manifest; Distressing Asthenopia.*—Ida W., aged twenty-five years, a delicate, overworked young woman, was sent to me on January 3, 1894, by a philanthropist, whose special interest is in working girls. The patient was employed in the "stamping of linen," an occupation demanding close application of the eyes for many hours a day—an "asthenopic occupation," as Dr. Roosa calls such work—*i. e.*, "an occupation which will produce asthenopic symptoms in eyes that would otherwise probably not be complained of."

She gave the following history: At the age of twelve years she had an attack of spinal meningitis; was ill then nine weeks, being delirious the greater part of that time, and made a slow recovery. Since that time she has always suffered from severe headache, at times being quite overcome by the pain and obliged to go to bed. This was regarded, both by the physician who attended her and by her own family, as the result of her serious illness before mentioned. When she came to me her subjective symptoms were as follows:

1. Constant headache, which was always worse in the afternoon.
2. Indistinct vision for distant objects.
3. The necessity of holding her head low to see lines at her work upon the table.
4. Nervousness.
5. Tired and painful eyeballs.
6. Drowsiness.

The eyelids drooped, and her facial expression was sad and dull, though her conversation was good. She looked drowsy, and seemed to require encouragement even to complain.

Vision = $\frac{20}{100}$+ : $\frac{20}{20}$ — with + 4 D., each eye. The ophthalmoscope showed normal media and fundi. Refraction, + 6·50 D., each eye. No astigmatism. Muscles in equilibrium. As this patient could not afford time for a more thorough examination under atropine, she was given the strongest concave glasses with which she could procure distinct vision, thus correcting only her manifest hypermetropia, which was, as above recorded, + 4 D., each eye.

She was ordered these for constant use, and will be expected to accept a stronger correction in the course of a few months, as she gradually relaxes accommodation under this correction. As soon as the glasses were put on she experienced a sense of "rest," as she called it. She returned in three weeks, on February 1st, and the change in her expression and manner was quite noticeable. Her eyes were "open" instead of half closed, her face had lost the sad, dull look, and her manner was confident and cheerful. She stated that her headaches had disappeared, and that she was no longer drowsy, even though often up late at night.

Her vision was then $\frac{20}{15}$ with her glasses, and she read Jaeger No. 1 at from eight to twenty inches. Her own statement was: "I seem to have gotten out of a gloom that covered everything before."

This patient was certain that her defective vision had produced drowsiness, as in Case IV the patient was convinced that her defective eyes were answerable for her insomnia. However, the fact remains that both the one and the other were completely relieved of these conditions after their refraction was corrected. Each had about the same degree of hyperopia. Their several occupations, individual temperaments, past condition of health, etc., were factors not to be ignored in attempting to arrive at a conclusion as to the exact part this error of refraction played in the production of insomnia in the one and the very opposite condition in the other.

17 East Thirty-first Street.

ALCOHOL: ITS USE AND ABUSE.

By WALTER SANDS MILLS, M. D.,
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Alcohol may be a food, a medicine, or a poison. The physiological action of alcohol is a much-mooted question. At first sight it would seem odd that no two authorities should agree on the action of a drug so generally in use. But the difference of opinion is due, partly, to that very fact, for the action of the drug is very different on those accustomed to its use and on those unaccustomed to it; another reason for this difference of opinion is that no two investigators have gone to work in the same way. Until accurate scientific experiments, similar in every detail and conducted by different observers, so that comparison of results may be made, each student will have to draw his own deductions from the evidence at his disposal and from his own observations, and his opinion will vary accordingly.

A small quantity of alcohol acts on the cerebro-spinal system, giving a sensation of warmth by causing a relaxation of the terminal capillaries and a consequent flush of blood to the body surface. There is no actual rise in temperature; the flush of external heat is at the expense of the internal organs. Large doses of alcohol cause an actual lowering of the temperature. The cardiac force and arterial pressure are increased by the physiological dose. The functional activity of the brain is augmented. There is a feeling of mental and physical exhilaration, followed by one of comfort and repose. If the ingestion of alcohol is continued to toxic doses, this disturbance of the system becomes more and more marked; the exhilaration is changed to intoxication; there is loss of co-ordination, loss of muscular power; the subject sees everything double; there is sleeplessness, delirium, anæsthesia, and, when the full limit is reached, collapse. The picture is not a pleasant one. Alcohol is a true poison, and a person who has taken a full toxic dose is in an alarming condition. The temperature is subnormal; the body is bathed in a cold perspiration; the pulse may be so weak as not to be felt, it may be very slow or very fast; the breathing is labored and stertorous; the pupils may be contracted or dilated, they do not react to light; the lips are blue, the insensibility is profound. This condition may terminate in recovery or in death.

A period of reaction invariably follows the excitant stage of alcohol. The greater the quantity ingested, the more prompt and the greater the following depression. One ounce of alcohol, diluted, taken during the twenty-four hours and always after meals, is considered the limit of physiological usefulness. More than that quantity will in time produce pathological results. From the nature of its reaction it is self-evident that alcoholic stimulation is not a good thing to do work on. It has been proved time and time again that continuous work, either mental or physical, is only made harder by using alcohol as a stimulant. The vital powers are assisted for a short time, to be left in a more exhausted condition after the temporary effect has worn off.

Alcohol lessens the power of enduring severe heat or severe cold. The experience of arctic explorers has been universal in that man's ability to withstand the extreme cold of Northern latitudes is lessened by the taking of alcohol.

After a severe mental or physical strain, when the vitality is exhausted, a small quantity of alcohol as a restorative and sedative may be of service; but it is never of use as a stimulant to continue working on.

Some of the alcohol taken into the system is assimilated; it is therefore a food. Some of it is given off unchanged by the organs of elimination. It is found in the breath, in the perspiration, in the urine, in the fæces. It has also been found, unchanged, in nearly all the organs and tissues of the body, particularly in the nervous system and in the liver.

The amount of urea eliminated is decreased. The amount of urine is increased.

Alcohol taken into the stomach, diluted, and in small quantities, assists digestion by stimulating the mouths of the gastric glands and causing an increase in the flow of the various juices. If the use of alcohol is habitual, we eventually have a catarrhal condition due to overstimulation with consequent faulty digestion. Alcohol in quantity precipitates pepsin and impairs its utility, giving another source of alcoholic dyspepsia.

Alcohol passes rapidly from the stomach into the portal circulation. Here it stimulates the hepatic cells, and in time causes fatty and atrophic changes, with an increase in the connective tissue.

This impairment of the parenchyma of an organ, with an increase of its connective tissue, is one of the results of the habitual use of alcohol generally throughout the economy. Post-mortem changes of this nature are readily observed in habitual drinkers.

Absence of Genitalia.—Kochenburger (*Zeitschr. f. Geburtsh. u. Gynäk.; Arch. of Gynæcol., Obstetrics, and Pædiatrics*, December, 1893) describes this case. The patient was distinctly feminine in general development. The mammæ and mons Veneris were well developed. There was a slight fold in the vestibule, which was shallow, and no fossa between the labia minora. No vagina existed. In its place lay a cordlike structure which ran upward an inch and a half and ended in a fold which ran transversely and clearly represented Müller's ducts; no trace of an ovary could be found. Vicarious menstruation, in the form of epistaxis, occurred regularly.

The Lyman Prize.—The Lyman prize established for graduates of the Boston City Hospital, of not more than three years' standing, by Mrs. George H. Lyman, in memory of her husband, Dr. George Hinckley Lyman, who was a member of the medical staff of the hospital for many years, has been awarded this year, in two equal parts of one hundred and fifty dollars each, to Dr. John Lovett Morse, of Boston, for an essay entitled A Bacteriological Study of Four Hundred Cases of Inflammation of the Throat in Diphtheria and Scarlet Fever, with Special Reference to Pathogenesis, and to Dr. Arthur Howard Wentworth, of Boston, for an essay entitled A Study of the Blood in Early Life. The usual prize is one hundred and fifty dollars, but no prize was awarded last year.—*Boston Medical and Surgical Journal.*

The West End Medical Society.—At the annual meeting, held on February 3d, the following officers were elected for the ensuing year: Dr. F. Spencer Halsey, president; Dr. S. V. Ten Eyck, vice president; Dr. F. J. Blodgett, recording secretary; Dr. H. G. Meyers, treasurer; Dr. H. S. Houghton, corresponding secretary; and Dr. C. B. White, pathologist.

The Rinecker Prize of the University of Würzburg for this year, amounting to a thousand marks and a silver medal, says the *Deutsche Medizinal Zeitung*, has been awarded to Professor Camillo Golgi, of Pavia, for his researches in neurology.

The French Academy of Medicine.—The *Progrès médical* announces that Dr. Laveran has been elected a titular member, to fill the vacancy in the Section in Therapeutics and Medical Natural History caused by the death of Dr. Marotte.

The Central University, of Kentucky.—On the 9th of January a new building for the Hospital College of Medicine and the Louisville College of Dentistry, which are departments of the university, was dedicated in Louisville.

The Kentucky School of Medicine, of Louisville, is about to add a handsome and capacious new building to its equipment.

THE
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Edited by Frank P. Foster, M. D.

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INTERMITTENT NEPHRYDROSIS.

At a recent meeting of the Paris *Société de chirurgie*, a report of the proceedings of which we find in the January number of the *Revue de chirurgie*, M. Tuffier remarked that three points had to be studied in the consideration of intermittent nephrydrosis—namely, the ætiology and pathogeny, the pathological anatomy, and the treatment. It seemed to him certain that the affection was almost always directly connected with a movable kidney. Facts sustained this, for it was almost invariably met with in women and nearly always affected the right kidney. The mechanism was that which had been maintained by Landau. M. Tuffier had come to a realization of it experimentally. In eight dogs he had rendered the kidney movable, and had then fixed it in an abnormal situation; in four instances nephrydrosis had been the result, and this proportion was about the same as was observed clinically. This nephrydrosis was accompanied by the formation of a sharp bend in the ureter at the point where it crossed the vessels, about two thirds of an inch below the hilum of the kidney. Simple compression of the kidney was sufficient to cause the urine to overcome the impediment offered by this bend. The bend could be straightened out, and the nephrydrosis would then disappear at once. Anatomical facts observed in the course of operations also spoke in favor of the same mechanism. In two patients the speaker had distinctly observed the bend in the course of an operation, and in a third patient he had observed at a point about an inch below the hilum a sudden change of caliber in the ureter, indicating that there had been a folding at that point. This bend could be made to disappear by a change in the attitude of the person; one of the attachés of the Hôpital Beaujon, who had a movable kidney, perceived that her flank increased in volume and became painful when she remained standing, but that as soon as she lay down and raised her hips decidedly the swelling disappeared and she felt herself relieved and passed water copiously.

Experiments showed, the speaker went on to say, that when the kidney was lowered, at first there was formed, not a sharp bend, but a curvature, and this curvature was sufficient to diminish the flow of urine. At the same time intense renal congestion took place, and the kidney underwent a change of shape. Two types of such change were met with: sometimes the organ took the form of a horseshoe, at other times it was flattened. As for the phenomenon of intermittence, there were two ways in which it could be explained: The bend might be straightened out spontaneously by virtue of the mobility of the kidney; in other cases the tension of the kidney might overcome the impediment and result in the expulsion of the urine. Of the methods of treatment that had been proposed, preference should be given to the operation of fixation of the kidney. The author had practiced this in nine cases, and in all of them success had been the result.

THE KNEE-JERK IN CASES OF CYANOSIS.

In the *Lancet* for January 20th we find one of an interesting series of communications by Dr. J. Hughlings Jackson which he styles Neurological Fragments. In this particular communication he states that he has not recently had opportunities of making observations with regard to the state of the knee jerks in many cases of excessively defective oxygenation of the blood. He gives summaries, however, of three cases observed by Dr. Hawkes, a former house physician of his at the London Hospital. One case was that of a boy, six years old, who died of broncho-pneumonia. On the morning of the day before his death the patient's knee-jerks were present, in the evening of that day they were not elicited with certainty, and on the next morning they could not be elicited. This case, Dr. Jackson remarks, is not of much value as to the influence of defective oxygenation of the blood, for the jerks were absent only on the day of death.

The second case was that of a woman, fifty years old, who was admitted on the 19th of April, 1893, at 6 P. M., unconscious and cyanosed. She had taken laudanum, which she had been in the habit of taking for dysentery. It was supposed that she had taken two ounces. Her knee-jerks were absent. At 6.45 P. M. the pulse was 132 and stronger; the respiration was 4, expiration being very prolonged; the knee-jerks were absent; there was no corneal reflex; and the pupils were of about the size of a pin's point. In spite of the administration of oxygen, the knee-jerks remained absent until 11 P. M. and possibly longer. At 2 A. M. on the 20th consciousness was returning, and at 2.45 the patient answered questions. On her recovery, the knee-jerks were elicited. Dr. Jackson says that he can not be certain that absence of the knee-jerks in this case was due solely to defective oxygenation of the blood; for aught he knows, opium itself in poisonous doses may abolish them. The knee-jerks were absent before the subcutaneous injection of a quarter of a grain of atropine at 6.45 P. M. on the 19th.

The third case was that of a man, fifty-four years old, who was admitted into the hospital at 12.50 A. M. on February 7, 1893, after having taken an ounce of chlorodyne. He was not altogether comatose, and resisted the introduction of the stomach-tube; but at 1.15 P. M. he was quite comatose, and the faradaic current did not rouse him in the least. He recovered. His knee-jerks were present throughout.

Dr. Jackson thinks it desirable that the knees should be tested in cases of cyanosis from whatever cause. It is to be borne in mind particularly that, according to Dr. Russell's researches, in asphyxiated dogs and rabbits the knee-jerks are exaggerated before they are lost, and after they return they become exaggerated again before they become normal. In most cases of asphyxia from disease in man defective oxygenation of the blood develops slowly and increases gradually; in dogs that are asphyxiated artificially it begins suddenly and attains its maximum rapidly.

MINOR PARAGRAPHS.

THE PROPOSED NATIONAL BUREAU OF PUBLIC HEALTH.

Apropos of the leading article in the *Journal* for January 27th, in regard to the supererogatory and futile features of a bill before Congress proposing to establish a bureau of public health, we would refer to the action of the Memphis Medical Society in regard to this bill. The *Memphis Medical Monthly* for February states that the bill was submitted to a committee of the society for consideration. Among the members of this committee were R. W. Mitchell, one of the most distinguished sanitarians in the Mississippi Valley, who was a member of the late National Board of Health from its origin until it went out of existence; Dr. G. B. Thornton, whose administration of the office of president and executive of the Memphis Board of Health has made that city's sanitary condition what it is to-day; Dr. J. E. Black, an ex president of the Memphis Board of Health and an ex-official of the National Board of Health; and Dr. F. L. Sim, a member of the Tennessee State Board of Health. We cite the names and qualifications of these gentlemen in order to show their competency to speak in regard to the question at issue. The committee stated that, after examining the full text of the contemplated law bearing on national quarantine, it did not see wherein it was better than the law of January 13, 1893. The latter was full and comprehensive in theory, and, so far as it had been tried, was effective in practice; and the passage of the proposed law would supersede, or so interfere with, that law as to be undesirable and unwise. Hence the committee reported adversely to any action on the part of the society calculated to interfere with the status of the national maritime and inter-State quarantine law now in force. The report was adopted by the society. We believe that this action, based on an expression of opinion from experienced and practical rather than theoretical sanitarians, and substantiating all that was said in our article in regard to the objections to the enactment of any such law, will receive the indorsement of the majority of actual sanitarians in this country, if not of all of them.

PULMONARY CONSUMPTION AND BOARDS OF HEALTH.

In this issue we print nearly the whole of the discussion that took place at a recent special meeting of the College of Physicians of Philadelphia, called to consider a resolution affirming it to be the sense of the college that it was inexpedient for the board of health of that city to require reports of the occurrence of tubercular disease and to treat the quarters occupied by the victims of such disease by means of disinfection, etc. We do not regret devoting so much space to this discussion, for several of the most distinguished physicians of Philadelphia took part in it, and what they said is replete with interest to all our readers. It is evident that there is a good deal to be said on either side of the question, but we must conclude that the College of Physicians was wise in adopting a resolution calculated to discourage undue zeal on the part of the board of health. Whatever theoretical views we may hold, and however perfectly those views may seem to be borne out by facts, it must be recognized that the stamping out of pulmonary consumption, or its decided reduction, by official action is fraught with practical difficulties that make it almost impossible. Still, the attempts of boards of health to do something toward accomplishing this object are certainly commendable, and we may add that cautious and tentative steps in the line of their enforcement may even achieve considerable good while doing little if any injury to individuals. The question is one that can not yet be looked upon as having been worked out to a satisfactory solution.

CHRONIC PAROTIDITIS.

In the *Journal des praticiens* for January 20th there is a report of a meeting of the *Société médicale des hôpitaux* at which Dr. A. Renault showed a woman, forty-one years old, who had entered the Broca Hospital in December. She had been attacked with an inflammatory affection of the throat four years before, and following that attack there had been a purulent discharge. Some time afterward she had been subjected to antisyphilitic treatment, and since that time the parotid glands had remained painful and swollen. At the present time they were hypertrophied and sensitive to pressure. There was no lesion of the mouth, and Stenson's ducts were permeable. Sometimes she discharged saliva in great quantity, and gentle pressure on the glands was sufficient to make the saliva flow. The case was considered to be one of chronic parotiditis. M. Anthony remarked that he had observed chronic parotiditis in a man who had had mumps, but in that case there had been no salivation.

THE LATE BISHOP POLK.

The London house of Longmans, Green, & Co. has just published a book entitled *Leonidas Polk, Bishop and General*, written by the second and only surviving son, Dr. William M. Polk, of that conspicuous figure of our late conflict. The work is issued in two handsome volumes, with four steel plates and nine maps. It is stated that it contains much of original, or hitherto unpublished, records and correspondence of the soldier bishop. The style of composition is of the direct, unvarnished variety that befits a busy practitioner who assumes the cares of authorship.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 13, 1894:

DISEASES.	Week ending Feb. 6.		Week ending Feb. 13.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	0	0
Typhoid fever	6	2	1	0
Scarlet fever	147	18	141	18
Cerebro-spinal meningitis	0	0	2	2
Measles	586	32	573	24
Diphtheria	192	73	178	57
Small-pox	19	8	24	10

The Columbia Chemical Company.—We are requested to announce that Dr. William A. Hammond, having demonstrated his right to hold stock in a manufacturing company, has disposed of his entire interest in the company, with which he has no further connection.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 28 to February 10, 1894:*

Smith, Joseph R., and Irwin, Bernard J. D., Colonels and Assistant Surgeons General, are detailed to represent the Medical Department of the Army at the Eleventh International Medical Congress to be held at Rome, Italy, March 29 to April 5, 1894, and will proceed to the place designated at the proper time.

Town, Francis L., Lieutenant Colonel and Deputy Surgeon General, is relieved from duty at Fort Porter, New York, to take effect on the expiration of his present sick leave of absence, and will report in person to the commanding general, Department of the Missouri, for temporary duty in the office of the medical director of that department.

Robertson, Reuben L., Captain and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month.

O'Reilly, Robert M., Major and Surgeon, is granted leave of absence for two months, with permission to go beyond the sea.

Brooke, Benjamin, First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Leavenworth, Kansas, to take effect upon the arrival of Wilson, William H., First Lieutenant and Assistant Surgeon, at that post, and ordered to Camp Pilot Butte, Wyoming, for duty.

The following-named officers of the Medical Department are relieved from duty in this city (Washington), to take effect upon the completion of the present course of instruction at the Army Medical School, and are assigned to duty at the stations hereinafter designated:

Quinton, William W., First Lieutenant and Assistant Surgeon, Fort Riley, Kansas.

Bratton, Thomas S., First Lieutenant and Assistant Surgeon, Fort Niobrara, Nebraska.

Howard, Deane C., First Lieutenant and Assistant Surgeon, Fort Buford, North Dakota.

Porter, Alexander S., First Lieutenant and Assistant Surgeon, Fort Keogh, Montana.

Wilson, William H., First Lieutenant and Assistant Surgeon, Fort Leavenworth, Kansas.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending February 10, 1894.*

Streets, T. H., Surgeon. Detached from the U. S. Steamer Bennington and ordered to the U. S. Steamer Detroit.

Hibbett, C. T., Surgeon. Detached from the U. S. Steamer Detroit and ordered to the U. S. Steamer Bennington.

Ross, J. W., Surgeon. Ordered to the U. S. Receiving-ship Independence.

Olcott, F. W., Passed Assistant Surgeon. Ordered to the Naval Hospital, Brooklyn, N. Y.

Spratling, L. W., Passed Assistant Surgeon. Detached from the Naval Hospital, New York, and to wait orders.

Cook, Frank C., Assistant Surgeon. Ordered to the Naval Laboratory and Department of Instruction, New York.

Society Meetings for the Coming Week:

Monday, *February 19th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society.

Tuesday, *February 20th:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Kings and Westchester (White Plains), N. Y.; Baltimore Academy of Medicine.

Wednesday, *February 21st:* New York Academy of Medicine (Section in Public Health and Hygiene); the Alumni of Bellevue Hospital Medical College (annual—Carnegie Laboratory); Harlem Medical Association of the City of New York; Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark).

Thursday, *February 22d:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia.

Friday, *February 23d:* New York Clinical Society (private); New York Society of German Physicians; Yorkville Medical Association (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *February 24th:* New York Medical and Surgical Society (private).

Letters to the Editor.

CONCERNING THE FINANCES OF THE ACADEMY OF MEDICINE AND THE ACTION OF THE TRUSTEES.

New York, *January 25, 1894.*

To the Editor of the New York Medical Journal:

Sir: The editorial on the Finances of the Academy of Medicine, in your issue of January 6th, was brought to the notice of the trustees of the New York Academy of Medicine at their monthly meeting on January 25th. As the article is likely to give rise to misapprehension, the undersigned, the board of trustees, are of the unanimous opinion that you should be requested to publish a refutation of some grave charges contained therein.

Your informant states that the publication of the report of the treasurer of the Academy of Medicine was not accomplished "without the vigorous opposition of some of the trustees, who are said to have taken the remarkable position that the fellows of the Academy should continue in ignorance regarding its financial status. Many of the fellows have desired a more detailed statement, but nobody has seemed willing to take the initiative toward requiring the trustees to print it. In fact, we have heard it stated that some of these officers seemed to think that the Academy was to submit to their dictation, rather than they execute the will of the Academy. But the president, Dr. Roosa, urged that the fellows be made acquainted with the value of their property, as well as with some of its needs, and the majority of the trustees have concurred in this sensible position and have published this report."

The undersigned, while declining to notice the gratuitous insinuation of "dictation," have the pleasure of being able to assure you, and through you the profession, that there is not and never was a difference of opinion on important points between the trustees and the president of the Academy; that the fellows of the Academy were never kept in ignorance regarding its finances; that a detailed report of the same was publicly read at every annual meeting of the Academy; that the report, it is true, was not printed for every fellow and sent to his residence, because such publication and transmission, after the report had been the subject of a public communication, was, in former years, considered unnecessary and uselessly expensive; that, however, when the suggestion was made at a meeting of the board of trustees that the report might be printed and sent to the individual members of the Academy, there was no objection, no unwillingness, no opposition, no discussion at all, but an instantaneous unanimous concurrence.

The undersigned trustees claim, and the medical profession has a right to expect, that the affairs of the Academy shall not be made the subject of unfounded reports. There is no ground either for suspicion or for concealment. The New York Academy of Medicine is in a flourishing condition, and its officers are all working harmoniously together for the furtherance of its prosperity. It is practically out of debt; the library and its funds are increasing, the building is both a comfort and an ornament, and the membership is select and growing.

A. Jacobi, *Chairman*,
Arthur M. Jacobus, *Secretary*,
D. B. St. John Roosa, *President of the Academy and Member of the Board of Trustees*,
Everett Herrick.
Daniel Lewis,
Richard Kalish, *Recording Secretary of the Academy and Member of the Board of Trustees*, and
Frederick A. Castle,

who adds to the foregoing the statement that the matter referred to in the editorial article is the finances of the Academy, as distinct from the funds in the care of the trustees; and that the trustees have, as such, nothing whatever to do with them or with any publication regarding them. The foregoing reference to the action of the trustees relates to the report by the "treasurer for the trustees," which was not mentioned in the editorial article.

⁂ Reference to the article complained of will show that there was no intimation of any discord between the trustees and the president of the Academy. We have since learned that at the meeting at which the vote was taken to print the report on the finances of the Academy, all present voted affirmatively; so the statement that the majority so voted was erroneous. The article does not even suggest that there is ground for suspicion or concealment or that the Academy is not in a flourishing condition; on the contrary, it distinctly congratulates the administration on the excellent condition of the organization and virtually commends the example to other medical bodies.

Proceedings of Societies.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Special Meeting of January 12, 1894.

The President, Dr. S. Weir Mitchell, in the Chair.

The Proposed Action of the Board of Health in Reference to the Registration of Tuberculosis.—The council, to which the resolution and amendment with reference to the proposed action of the board of health concerning tuberculosis had been referred, offered the following resolution to the college:

Resolved, That the College of Physicians believes that the attempt to register consumptives and to treat them as the subjects of contagious disease would be adding hardship to the lives of these unfortunates, stamping them as the outcasts of society. In view of the chronic character of the malady, it could not lead to any measures of real value not otherwise attainable.

That strict attention on the part of physicians in charge of the individual cases, insisting on the disinfection of the sputum and of the rooms, on adequate ventilation, and on the separation of the sick from the well, as far as possible, will meet the requirements of the situation so far as they practically can be met, and better than any rules that, for diseases so chronic, can be carried out by a board of health.

That the College of Physicians respectfully requests that no official action be taken in the matter by the board of health, except the insisting on the disinfection of rooms in which consumptives have lived and died in instances in which such procedure is not likely to have been adopted under the direction of the attending physician.

Dr. Owen J. Wister, who opened the discussion, said: When I offered my resolution at the December meeting of the college it was objected by those who were in favor of registration of cases of consumption that nothing was intended beyond registration in order that medical literature of a kind to warn persons of danger might be sent to their houses. In a paper read before the Pan-American Medical Congress on Tuberculosis, and published in the *Medical News* of October 21, 1893, there is a good deal more in reserve which is insisted upon.

Registration, in the first place, is meant to include the residences of all persons affected with pulmonary tuberculosis, and, even if the place of residence is temporarily changed, it must be by and with the consent and knowledge of the board of health.

As to the literature, so called, I think that is of doubtful desirability. Those who spent the summer of 1892 in town, when there was a cholera scare, will remember that there was a great deal of this sort of literature—the papers reeked with it. The evening papers published articles of such a sensational character that the health officer was lashed into such a state of hysterics as to propose a quarantine against New York, under the act of Legislature which makes such a proceeding lawful when a contagious disease is "raging in a neighboring city." The "rage" in this case amounted to four cases in a population of a million in a month. This proposition, however, was not adopted. But, while the board of health was thrown into spasms of terror, there was enough that was ludicrous in this literature to throw the community into spasms of laughter, and we had a rather cheerful summer. It can not be hoped that this view will always be taken when, instead of a scare of two or three weeks, it will last ten or fifteen years, while from forty to fifty are dying a week. It is then possible that this literature may lash the whole community into panic, and that, instead of regarding the unfortunate victims of consumption as objects of compassion, they will be looked upon as peripatetic fountains of danger, and a feeling of hostility to them will arise. This may last for years, for during the whole period of softening they are regarded as sources of danger. In fact, they are to be treated as criminals guilty of consumption. As I said before, their residences, however temporary, are to be disinfected and their miserable lives are to be rendered more wretched by being haunted by the familiars of the inquisition. It is asserted that if these radical measures are carried out tuberculosis will be eradicated in a few years; of that, it is said, there is no doubt. Now, no other contagious disease has ever been extinguished, even with the added protection of vaccination in small-pox. Those of us who are not in the intimate confidence of Nature find it difficult to understand how a hereditary disease can be eradicated by measures which only limit its spread by contagion; and if it is not hereditary, whence come those forms of tuberculosis other than pulmonary? It can not be pretended that babies a year or two old get tubercular meningitis by contagion, nor can white swelling, nor suppurating glands, nor the many other exhibitions of scrofula come from contagion. I think very few of us will concur in this sanguine expectation. There are several other suggestions: one is likely to be very popular; it is that all persons working in factories and the like, who are affected with pulmonary tuberculosis in the softening stage, shall be withdrawn and, when necessary, supported by pensions. In this country we have a large experience of pensions; pensions have bankrupted the treasury of the United States. It is easy to believe that people unwilling to work could get the necessary certificate from some twopenny doctor and be supported by the State. As to the more serious part of the matter, the treating of persons so unfortunate as to have pulmonary tuberculosis as criminals guilty of consumption is something so frightful that I implore the college to interpose its remonstrance against such an outrage on common sense and common humanity.

Dr. L. F. **Flick** said: Together with other fellows, I should like to bring up the entire subject for discussion, and, without wishing to find fault with the council in referring back the resolution in amended form, I should like to offer a substitute which will bring up both registration and special hospitals for the treatment of the consumptive poor. The substitute is as follows:

Whereas, Tuberculosis is now known to be a contagious disease: and

Whereas, The methods by which the disease is conveyed from the sick to the well are now clearly understood; and

Whereas, It has been shown that the room which is occupied by a consumptive during the infectious period of the disease, and the furniture and the bedclothing which have been used by him, become infected and are liable to convey the disease to others who may occupy or use them subsequently; and

Whereas, Tuberculosis, owing to its long duration, cripples the bread-earning capacity of the family, when it occurs among the poor, to such an extent that the want and hardships which follow in its wake prepare the healthy members of the family for the disease; therefore be it

Resolved, That we recommend to the Board of Health of the City of Philadelphia the registration and disinfection of houses which have been infected by tuberculosis;

Resolved, That we recommend to the City Councils of the City of Philadelphia the establishment of a municipal hospital for the treatment of persons suffering from tuberculosis.

The question of contagion, Dr. Flick went on to say, seems to be admitted, and can, therefore, be eliminated from the discussion. I will then take up the question of prevention. In reply to what has been said by Dr. Wister, I may state that the paper from which he quoted was a scientific paper covering the entire subject. He ought to have told you that the author pleaded in that paper only for a beginning in preventive measures.

The contagion of tuberculosis being admitted, what measures are necessary for its prevention? The careful investigation of this subject from many points of view by Dr. Cornet, Dr. De Forest, and myself shows beyond doubt that there is a local infection—that the consumptive in his home is sure in his ordinary daily life to infect his room, the furniture, and the bedclothing. The experiments made by Cornet illustrating this subject are most elaborate. They covered a period of two years, during which time he perseveringly followed out his line of research. He examined the dust gathered from the floor, the walls of the room, the bedposts, and the bedclothing of persons in advanced stages of consumption confined to their beds. He found that by inoculation with this dust he was able to produce tuberculosis. He found, moreover, that where a patient was sufficiently intelligent and obedient to follow the instructions to always spit in the sputum cup and never into a handkerchief or on the floor, inoculation with the dust produced no effect; but where the patient occasionally spat into a handkerchief or into a nook in the room, inoculation with dust from the surroundings of these places was effective. He was able to demonstrate that in proportion to the obedience and cleanliness of the patient the extent of the infected environment decreased. Where the patient was cleanly and took ordinary precautions, but not absolute precautions, the infection extended to only a limited space—possibly four or five feet. Where the patient was uncleanly and spat indiscriminately, not only the bedposts and the floor, but also the walls were capable of conveying the infection. The clinical investigations which I made in this city, and some illustrations which I shall throw upon the screen, and the clinical investigations made by Dr. De Forest in New Haven, corroborate these results in such a way that their meaning can not be misunderstood.

[Here the speaker gave an account of his observations in the Fifth Ward of Philadelphia and of Dr. De Forest's observations in New Haven.]

Now, this evidence, the speaker continued, of infection and retained infection of houses, together with the demonstrations made by Cornet, can point to only one conclusion, and that is that the houses which have been inhabited by a consumptive for a given period will retain the infection and convey it to others. I have investigated quite a number of cases which illustrate the same point. I have knowledge of a telegraph office in Maryland in which five consecutive operators contracted tuberculosis and died. The results in these five cases were so striking that people became superstitious in regard to the office. I have been informed by a person who saw the office that the consumptives had spat around the office, and that it was lined with tubercular sputa. I have been able in this city to trace a great many cases where persons innocently moved into houses unsuspicious of any infection, and where, within six months, a member of the family who was healthy before had taken the disease, and the case had been followed by others.

Dr. De Forest mentions a very striking result of his investigations in New Haven. He investigated the histories of a hundred persons coming to the medical clinic of the city, and found that fifty-two were living in infected houses. In 1888 I carefully examined the deaths that occurred in the Fifth Ward during that year. There were eighty-three *bona fide* deaths from consumption. Although out of the 3,500 houses only 650 were infected, two thirds of these cases occurred in these infected houses. Of the remaining third, a large number of the patients had lived in infected houses and had changed their residences, so that apparently more than two thirds of the persons in whom death occurred in 1888 had contracted the disease while living in infected houses.

If the statements I have made are true, how is it possible to institute any practical preventive measures without registration? The education that is spoken of in the resolutions offered by the council will not accomplish much. Cornet has shown that even where the patient has carried out most of the instructions the immediate surroundings are infected. As you are well aware, among the very poor there is no nursing. The consumptive is apt to lie on a bench in the kitchen—a small room, perhaps eight by twelve feet. He has to wait on himself, and probably spits indiscriminately. Under such circumstances he is sure to infect the room, and it has been shown that the disinfection of such a room can not be effected by burning sulphur, but special methods are required. One of the most efficient methods is by rubbing down the walls with dry bread, and then washing with carbolic acid or some other powerful germicide. The furniture and the bedding also require disinfection. You well know that the houses in which the poor live are owned by men who are trying to get as much money as possible out of them. The owners will not disinfect these houses if they can avoid it. It is only by the authority of the government that this disinfection can be accomplished.

Now, is the profession ready to step forward and say, "We will make an earnest effort to stamp out tuberculosis"? The profession throughout the country has said that it would. The

American Public Health Association, during its session in Chicago, adopted resolutions asking that registration should be practiced. The Section in Hygiene of the Pan-American Medical Congress adopted similar resolutions. The Congress of Tuberculosis, in Paris in 1888, passed resolutions asking that tuberculosis be recognized as a contagious disease, and in 1891 passed a resolution asking that disinfection be practiced.

Will disinfection have any effect? It will. I should like to cite one illustration. So far as I know, Berlin is the only city that has taken scientific precautions against tuberculosis. The result is most encouraging. In the city of Berlin there has been a marked reduction in tuberculosis from 1884 to 1891—a more rapid reduction than in any other city of which I can obtain statistics. In Philadelphia there has been a reduction. In London there has been a vast reduction since the establishment of consumptive hospitals fifty years ago. Whether or not registration is being enforced in Berlin I do not know. I have been told by private parties that it is. Contrasting the reduction in Berlin with the reports from other cities, we find that the mortality in Paris was about the same in 1890 as thirty years prior. Whether or not France will succeed in establishing preventive measures is yet to be known. I have had no definite information on the subject.

As to the sentiment on this question, it is all on the side of registration. I grant that it may be hard for wealthy people to be recorded as suffering from tuberculosis, but this is a disease of the poor; the vast majority of consumptives are very poor, and the necessities of the poor so demand registration that it should outweigh the sensitiveness of the rich. But the sensitiveness of any one can be overcome by the suggestion embodied in the resolution I have offered, a suggestion which was made to me by Dr. James C. Wilson—that is, instead of registering the individual, to register the infected house. It would then not be necessary to register tuberculosis among the wealthy, as only houses that had been infected would have to be registered. Where infection can be prevented by proper sanitary measures there would be no occasion for registration. This would enable us to register those houses that needed to be disinfected.

The best place to study this subject is among the poor. It is there that I have learned my lessons. I am satisfied that every man here will reach my conclusions if he will go among the very poor and study this question at the bedside, and see how, one by one, these people die from the disease because they are unable to protect themselves, and because in the endeavor to protect and supply medicine to the stricken one the healthy fall victims to the disease. It is they that need aid. The College of Physicians should now take a firm stand and do something in aid of these people. It is not necessary to do everything at once. Let us make a beginning. Experiments have been made; let us now come to action. It is not fair to the public that the medical profession, with the knowledge it possesses, should do nothing. The laity can not act, because they have not the knowledge. If we who have the knowledge do nothing, we are certainly responsible for the deaths of those who otherwise might be saved.

Dr. J. M. **Da Costa** said: Let me say, in the first place, that I thoroughly admire the enthusiasm which Dr. Flick has for years brought to the study of this question. I think that the way in which he has gone about this work is in every respect most commendable, and in its spirit and scope this is one of the best series of observations with which I am acquainted. If I differ with him, it is rather in the conclusions than with reference to his mode of investigation and his aims.

When we speak of contagion in consumption we can not mean that it is markedly contagious. There is no proof that it is. It is not contagious like typhus fever, or small-pox, or scarlet fever, or diphtheria. It is only slightly contagious. It is, indeed, so slightly contagious that some of our best thinkers with the largest fields of observation, notwithstanding the evidence that has been adduced, still hold that it is not contagious at all. For instance, if we take the opinion of a man so long connected with the Brompton Hospital as Dr. Williams, we find in the last edition of his work on *Pulmonary Consumption* that he maintains that no more deaths from consumption occurred in the attendants of the Brompton Hospital than occurred among the same number in ordinary life. The evidence of Dr. Andrew, of the Victoria Park Hospital, is in the same direction. When we look at the conclusions of these men and at those of Wilson Fox and many others, it is going too far to assume that the whole profession admits the disease to be contagious.

That it is moderately so, and that it can be communicated under exceptional circumstances, I firmly believe; but that we should regard it as a very contagious disease and take all the precautions that we do in such diseases, I deny. If it is contagious, it is contagious, as every one admits, chiefly through the sputum. Is it to be understood that an inspector from the board of health is to come daily to take care of the sputum cup? Is not the intelligent physician the proper health officer? Is not what he says sufficient, and can he not advise and enforce the destruction or the disinfection of the sputum as well as any public officer? Finding bacilli in the bedclothes and on the bedstead, and destroying them, will not eradicate consumption. Tubercle bacilli are widely diffused. They are in the dust of the air we breathe, blown about from the dried sputum of consumptives in the street. They have been demonstrated to exist on the fruit sold in our markets; they are in milk. They may, indeed, be said to be everywhere; and not only in the homes of consumptives. They have been found in churches, in places of amusement. Where will you draw the line as to watching and interfering with the life of the consumptive? Must we not take the broader view, and act on the degree of the communicability, and how far it is practicable to control it, rather than on the mere abstract question whether tuberculosis is contagious or not? The degree, every observer knows, is extremely slight.

The excellent series of observations about the houses is, I believe, subject to several fallacies. In the first place, unless you know the history of the persons themselves, these observations on the houses supposed to be infected are not conclusive. You must know whether or not the individual inherited tuberculosis. I am one of those who believe that the disease is largely hereditary. Of what use is it to say how many living in these houses die of consumption unless you know the history as well as the number of those who have occupied them?

Again, we should bear in mind, when discussing the contagiousness of phthisis, how enormously prevalent the disease is, and how difficult it is to draw conclusions when you have the most prevalent chronic disease to deal with. As bearing upon the question of infection from husband to wife, it has been calculated by Longstaff as a mere matter of statistics, without reference to the question of contagion, that of every 148,121 men who die of consumption in the ages of married life, there would be 4,358 wives who would have consumption—that is, about 1 in 33. Thus for every thirty-three married men who die of consumption there would be one woman have it, as a mere matter of ordinary frequency, whether the disease was contagious or not, and the probability would be a little more for phthisical wives. The number of cases seen in which both husband and wife have been affected is comparatively small. Flint, in over six hundred and seventy cases, noted but five such instances. My record shows more such instances, including one where a tubercular husband had three tubercular wives. Still I have not met with very many, and the chances are always slight that the husband will communicate the disease to the wife, or the wife to the husband. When we take all these facts into account, as well as the strong hereditary tendency of the malady, we must be careful how we draw conclusions in individual instances of apparent contagion.

Mindful of the observations of Dr. Flick, I have for some time questioned myself with reference to houses that I have known for years in which there has been consumption. But I have not taken them in one district, but everywhere. And this seems to me a much fairer way of studying the question, as the indiscriminate selection obviates the likelihood of error from bad hygienic conditions, especially of drainage, that houses near each other might share.

I have many houses in mind in which no case of consumption followed the first. In one, the father died of a slow consumption twenty years ago. The mother is, as regards tubercle, perfectly healthy to this day. The seven children have grown up into exceptionally healthy young men and women. In another house the wife died of consumption about eighteen years ago. The husband continued to live in the same house, and a family of children have grown up healthy. Another house has been occupied for many years by a consumptive who has had the disease for twenty-five years. Neither his wife nor any of the five children has become affected, though he is in the hands of a physician who does not believe in the contagiousness of the disease, and does not direct the sputum to be disinfected. Another house was occupied for years by a consumptive mother, whose husband had died of the disease many years before in another city. The son and daughter remained in the house mentioned for eight years in perfect health. It has since been occupied by a lady whose history I know, who is also healthy. The son got married about seven years ago, and has lived in various places. Within the last two years he has become a consumptive. His strong hereditary tendency determined it. I could go on citing instance after instance. I admit they furnish negative evidence. But negative evidence in a matter of this kind is valuable. I am on the whole quite certain that in by far the larger number of cases where I have known the history of both the house and the household for a long time, there could not even be any suspicion of house infection. It is true also that in most of the houses cleanliness and ventilation were well attended to.

Further, in the question of house infection, we must not overlook the fact that these supposed centers of infection may adjoin, and have common drainage. And, under any circumstances, does it not suggest that possibly there is something wrong in the drainage or subsoil as much as it does infection of the house? The well-known observations of Bowditch and of others have made us familiar with this mode by which consumption spreads in Massachusetts and in the whole of New England.

With reference to hospitals: Consumptive hospitals have been brought forward as a strong evidence of the non-contagiousness of phthisis, though I can not say that the figures they adduce are to me absolutely convincing, and there may be something in the greater prevalence and concentration of the poison that make consumptive hospitals more likely to be sources of infection. I have already referred to the observations and opinions of Dr. Williams and of Dr. Andrew. But as regards general hospitals in which consumptives are, they certainly can not be shown to be places of infection. I will quote the remarkable results in the General Hospital of Vienna. That hospital is one of the largest in the world. It is full of consumptives, and there were, as we know by some observations made long since, and before the disinfection of the sputum was attended to, in three years two thousand seven hundred and thirty-six deaths from phthisis, and not a medical officer or a nurse had become infected. I will refer to the record of the Pennsylvania Hospital, which always has consumptives in its wards. I have taken some pains to ascertain the truth in this matter. In my long connection with the institution there never has been a time when there were not cases of tuberculosis in the medical wards, and there have also been cases of surgical tuberculosis in the surgical wards. Of a hundred and forty-seven resident physicians that have been in the hospital in the last seventy years, of whom I have traced the medical history, and many of whom I have personally known and examined, but one has died of tubercular disease. Two others have at different times shown tubercular symptoms. One of these is now living in Arizona in fair health. In the other, even bacilli have disappeared from the sputa. The one that died did not die for over five years after leaving the hospital. Moreover, before becoming a resident physician, he was in delicate health, so that it is not fair to attribute his death to his having been in the hospital.

A stronger statement still can be made with reference to the nurses. Of forty male nurses that have been in the hospital in the last twenty-five years, but one has shown any sign of tubercular disease. He is now a patient in the hospital. He did not become tubercular until four years after leaving. There have been a hundred and sixty-three female nurses whose histories can be fairly well traced. Of fifty-three that have left the hospital in the last five years we know the present condition accurately. Not a single one of these certainly has had any tubercular symptoms, notwithstanding that there was always tuberculosis in the wards, always some exposure, and until recent years disinfection of the sputum was not practiced, although ventilation was always attended to. There is only one case even doubtful. One woman has an occasional cough, and is not strong. Her father and mother both died of consumption.

When we take all these facts into account, granting, as I do, that up to a certain extent tuberculosis is contagious, I think that the recommendation of the council to the board of health is the right one. Why fix the brand of leper on a poor unfortunate because he has consumption, when the medical officer can do all that is necessary? He can instruct how to ventilate and keep the house pure, and how to disinfect the sputa. What more could a board of health do? What can it do, except in instances of death where proper disinfection may not be carried out? Where death has occurred, and where disinfection is not likely to be practiced, it would be proper for the board of health to interfere. Under other circumstances why should we place a stigma on the consumptive, why have him pursued from house to house, why have him a marked man, or why have the house a marked one? Why give it a bad name and injure the landlord because there has been a death from consumption in it? I think that the resolutions offered by the council cover the whole case. No human being will suffer. It will only enforce on medical men the necessity of insisting on proper disinfection and proper hygiene. It will do as much as possibly can be done, and as much as any board of health can do.

With reference to hospitals for the consumptive, there is a great deal to be said on both sides of the question. Undoubtedly better means of separating the sick from the well are desirable. But whether this can be made in any way obligatory is doubtful; large social questions and questions of finance arise which take the matter far beyond our power to influence materially.

We must not overlook the strong hereditary tendency to the disease. If you want to get rid of consumption, it is not going to be simply by the disinfection of sputa and similar means. It will be largely by the prevention of the marriage of tuberculous patients. There you strike at the root of the evil. Until hygiene, preventive medicine, and law have reached that point, I think we must let this question take care of itself, doing the best we can to limit the ravages of the disease. I admit that it would be most desirable if we could separate the consumptive from the well. If the State were rich enough to make colonies in climates in which consumption will not flourish, that would be a most admirable means.

Let me say that it is not because I do not believe that phthisis is communicable that I oppose the contemplated action of the board of health to declare the disease contagious and to register consumptives, but because I believe that the means proposed will produce hardship without corresponding value, and that they are both unnecessary and insufficient. The board of health has already the right, and may well enforce it, to have any house that, whatever the cause, has a bad sanitary record, put in better order. Moreover, it can do much in destroying other sources of infection, such as from diseased meat, from the milk of tuberculous cows, in improving drainage, in favoring open spaces that air and sunlight may get into houses. But let us leave the care of the individual where it belongs—to the conscientious physician.

Dr. John B. Roberts said: It seems to me that this question is almost exactly the same as the one with which surgeons struggled ten years ago. I was one of the conservative ones who did not at first practice antisepsis, but employed half-way measures and saw all my cases suppurate. This is the point to which the question of tuberculosis has come.

I think that Dr. Da Costa's statement that there are a large number of cases all over the country, which he uses as evidence that the disease is not certainly infectious, is really an argument on the other side. It is so because there is infection. There are so many hereditary cases because infection of the parents has so weakened the tissues that a lowered resistance is transmitted to the children, and they can not repel the action of the bacilli.

It is said that the doctor can do all that is necessary, but Dr. Da Costa has said that he has known of cases where the physician would not take any precautions. That is the reason why the board of health should step in among the poor and see that the houses are clean. We see this in diphtheria. It is not a question of damage to landlords. It would be an advantage if every one knew that every house was disinfected, either by the willing efforts of the people, or of the owners, or by the board of health. There seems to be no reason why there should not be a report to the board of health if it will act in a reasonable manner. There is no expectation that the board of health would take the same measures as in typhus or typhoid fever. It is only a few years since typhoid fever was placed on the contagious list. If the matter had been discussed publicly there would no doubt have been many men on both sides—some for and some against putting typhoid fever on the infectious list.

It might be well to mention what has been done in other places. In February, 1892, at a conference of the medical staff of the Manchester (England) Hospital, with the medical officers of health and others, it was unanimously resolved that it was desirable that certain cases of phthisis should be notified to the medical officer.

Dr. Herman M. Biggs, the chief inspector of pathology, bacteriology, and disinfection in the health department, has sent to the health board a long statement regarding the contagiousness of tuberculosis, accompanied by a number of recommendations. [The speaker then read Dr. Biggs's statement, which we have already published.]

The North London Hospital for Consumption, Dr. Roberts continued, issues directions to its out patients and to its ward patients, recognizing the contagious nature of tubercular phthisis and suggesting precautions.

The Royal National Hospital for Consumption, Ventnor, says: "Patients are earnestly requested not to spit on the ground, floor, or fireplace, but to expectorate into the proper vessel. When this is not possible, the handkerchief should be used without fail; but, in order that the expectoration may not become dry, it has been arranged that a clean pocket handkerchief shall be supplied to each patient daily, and the soiled one removed for the double purpose of disinfection and washing. *It is to be distinctly understood that spittoons shall always be used when possible, and that the handkerchief is only supplementary to prevent spitting upon the ground.*"

The Manchester Hospital for Consumption takes similar ground: "All matter coughed up from the chest should either be spat in the fire or should be received into a vessel lined in such a way with a piece of paper that the paper and its contents may be lifted out and burned. Rags that can be burned should be used instead of pocket handkerchiefs, and if a pocket handkerchief is used it should be well boiled before the matter upon it has had time to become dry and powdery. N. B.—The medical officer of health for Manchester undertakes to purify, *free of cost*, any house that may be notified to him by competent medical men."

Last year the Northwestern Branch of the Society of Medical Officers of Health drew up a memorandum on the subject, which has been pretty widely distributed in the North of England. In this memorandum the infectious nature of consumption is definitely laid down, and dried sputum in the form of dust is indicated as the vehicle of contagion.

The County Borough of Oldham, in England, gives similar "precautions against taking consumption."

The French *Ligue préventive contre la phthisie pulmonaire* says: "The most frequent and powerful source of infection lies in the expectoration of consumptive patients. Although almost harmless so long as they remain in the liquid state, the sputa become especially dangerous when they are reduced to dust. They quickly take on this form when they are projected on to the ground, the floor, and the walls; when they soil clothing, counterpanes, bedclothing, curtains, etc., and when they are received into handkerchiefs, napkins, etc."

With this evidence of scientific work in other places, can the College of Physicians of Philadelphia deny the contagiousness of phthisis, or doubt the advisability of the board of health knowing and registering the houses of at least the poor and careless, in which the germs of tubercular consumption are threatening the public safety?

While there may be a few who believe in the non contagiousness of consumption, the vast majority does believe that it is contagious to a certain extent. It is the same old story of antisepsis and sepsis. The College of Physicians should go on record that consumption is contagious more strongly than appears in the report of the council. In the second place, something should be done. That, it seems to me, should be in the direction of letting some official know that consumption bacilli are to be found in a certain locality. Not the physician, but some central authority should have the authority to know and the authority to enforce such measures as will limit the spread of the disease among the poor. If we limit it among the poor, we limit it among the rich.

Dr. William Osler, of Baltimore, said: The question may be thus briefly stated: 1. Following a primary law of parasitism, the *Bacillus tuberculosis* frequents chiefly that organ in its host which communicates most freely with the exterior. Just as countless thousands of ova are thrown off from the intestine of the bearer of a tapeworm, so from tuberculous lungs in a state of softening and cavity formation, countless millions of bacilli are cast out daily with the sputa.

2. The widespread diffusion of the parasite outside of the body has been demonstrated in the infectiveness of the dust and of the scrapings of the walls of rooms and wards occupied by patients with pulmonary consumption. Moreover, the greater prevalence of tuberculosis in crowded communities, the enormous mortality from the disease in prisons and institutions, and its frequent occurrence as a house malady, suggest that the conditions favoring its continuance are those which foster the growth and spread of a specific contagion.

3. In the language of parasitology, the lungs constitute the chief seat of election. But, apart also from gross pulmonary lesions, the proportion of autopsies in which the bronchial glands are found tuberculous speaks unmistakably for direct infection in the exercise of their function as dust filters.

On these grounds I believe that the registration of pulmonary tuberculosis would be beneficial—enforcing attention to those sanitary details so apt to be slighted or overlooked, and diminishing directly the danger of contagion in the community.

Infection through food is closely related also to the endemic prevalence of tuberculosis. The incidence of the disease in the mesenteric glands of infants indicates that the gastro-intestinal canal is a portal of infection only a little less wide than that of the respiratory system.

The question of tuberculosis is not, however, settled with the disinfection of the sputa of consumptive patients.

The hereditary transmission of the disease must be accepted, though an estimate of the frequency of this mode of infection must necessarily be uncertain, but for certain forms Baumgarten's theory of latency is particularly suggestive. Tuberculosis has been well called the *pébrine* of the human race. The analogy is striking, for not only, as you will remember, is the parasite of the silkworm disease transmitted by direct contagion, but it also infects the eggs, which hatch, and may pass through various stages of development before they are finally destroyed.

Lastly, and here is consolation, the conditions which render individuals more or less immune scarcely yield in importance to those which maintain the vitality of the tubercle bacilli in a community. So widespread is the seed that few of us escape infection, and the statistics of the Paris morgue show that in more than fifty per cent. of adults the germs not only gain an entrance, but actually effect a lodgment. As a factor in tuberculosis, the *soil*, then, has a value equal almost to that which relates to the *seed*, and in taking measures to limit the diffusion of the parasite let us not forget the importance to the possible host of combating inherited weakness, of removing acquired debility, and of maintaining the nutrition at a standard of aggressive activity.

Dr. H. C. Wood said: I came here not to speak but to learn, and thus far have been quite successful. I wish to quote from a letter from Dr. Billings which has been placed in my hands. He says: "I should like very much to hear the discussion, but probably should have little to say, since I am doubtful as to what the decision of the college should be on this point. I presume that there are about six thousand people in Philadelphia affected with consumption, and that a considerable proportion of these have contracted the disease in infected houses. If it were possible by a systematic notification for the board of health to locate a considerable number of these infected houses, what steps would it take to purify them? How would it deal with those of the poorer classes who are affected with this disease, and with their furniture, bedding, and rooms? Until these questions are answered, I do not find it possible to form a definite opinion as to whether it is worth while to put in force a compulsory system of notification. Some of the worst infected rooms are probably those occupied by the criminal class, which is especially liable to this disease. For example, the Eastern Penitentiary is certainly thus infected; but in this I presume the board has no jurisdiction.

"It occurs to me that if the system of notification is to be tried, it might be best to commence with a limited area of the city in which the death-rate is now high; for example, the Seventeenth or the Seventh Ward, and see what results in diminishing the proportion of cases in this area can be obtained in the course of two or three years."

This thought has occurred to me, Dr. Wood went on to say, and has not been touched upon by any of the speakers. In a case of diphtheria the board of health is notified. The patient dies or gets well and the room is disinfected. Suppose, however, a case of consumption: the board of health is notified, the house is disinfected to-day, but reinfection occurs to-morrow, and the end need not come for four or five years. Unless you add the power to forcibly remove the patient and shut him up in a hospital jail where you can confine and permanently disinfect him, I do not see how you are going to get any good results from the process of disinfection. So far as disinfection goes, unless you can prevent to-morrow's reinfection, I see little use in to-day's disinfection. If, however, the board of health could disinfect houses in which consumptives have died, something might be achieved, but the ordinary death notice is all the notification required for this.

Dr. Thomas J. Mays said: In the charts which are presented to us it is to be noted that the disease is less frequent in those parts of the Fifth Ward in the neighborhood of Spruce and Pine Streets, and becomes more prevalent as we approach the poorer portion of the city. Dr. Flick's investigations extended over only a limited period of time—say, twenty-five years. In that time he finds that about twenty-five per cent. of the houses in the Fifth Ward have become infected. I hold that if the investigations had extended over a longer period—say, fifty, seventy-five, a hundred, or a hundred and twenty-five years—he would have been able to show that nearly every house in that ward was infected, according to the contagion theory, and that in nearly every house in that ward a consumptive had lived and died. The same argument holds against the investigations made in New Haven. I have in my possession a book reporting similar investigations made by Dr. Riffel in two old towns along the Rhine in Germany. He investigated the death-rate from phthisis in these towns for fifty, seventy-five, a hundred, and in some cases a hundred and fifty years back. He found that, in one town at least (Karlsdorf), at some time or other, nearly every house had had a case of phthisis in it. I think the same thing would hold in regard to the Fifth Ward of this city if the statistics extended back sufficiently long. But as these cover only a period of about twenty-five or thirty years, this is out of the question.

Dr. Flick also refers to the diminution of the phthisis mortality in Berlin, London, and Philadelphia. I think that if he had consulted the death-rate from phthisis in these cities he would have found a gradual diminution in the death-rate from consumption before the bacillus era began in 1882. I went over this subject some years ago, and I found that in every large city there was a gradual diminution in the death-rate. Dr. Flick maintains that the diminution in the death-rate of consumption since 1882 in this city has been due to the disinfection of the sputum. His own figures show, however, that there occurred a larger number of deaths from this disease during the nine years following 1882 than during the nine preceding years. In what way this makes a favorable showing for the theory of disinfection I am at a loss to understand. So far as I know, there has been no board of health regulation in this city. So far as I know, there has been no board of health regulation in Berlin, or London, or any other city, yet their deaths are gradually diminishing in number. If the gentlemen on the other side will look backward a hundred years, they will find that the very experiment which they are so anxious to try now was tested with the utmost rigor from 1782 to about 1855 in Naples. It was decreed that every physician who neglected to report a case should be fined a hundred and eighty dollars; that the ceilings, walls, floors, doors, and windows of the room in which consumptives died should be torn out and burned; that the bedding and furniture should be also burned, and that such dwellings were not to be occupied for a year. The result was that the family with phthisis was shunned and driven to want. Houses in which consumptives died depreciated in value. The sick were neglected and left to die inhumanly away from their families and friends. Did any good result from these laws? Brehmer states: "Concerning a diminution in the rate from phthisis in Naples the medical historians of that period are ignorant." According to Uffelmann (*Berlin. klin. Wochenschrift*, 1883, p. 369), Dr. de Renzi, the medical historian of Italy, states that the injury which had been inflicted on Naples by these laws was simply indescribable, and denounces the Neapolitan faculty in the severest terms for participating in their introduction.

In vol. xlv, p. 112, of the *British and Foreign Medico-chirurgical Review*, it is stated that Dr. Spatuzzi and Dr. Somma, "who have paid great attention to the mortuary returns in that city (Naples, about 1860), affirm that one sixth or a seventh of the whole mortality is due to phthisis," and that Dr. de Renzi "marvels greatly (in 1863) that the city of Naples is fully as much liable to phthisis as either London or Paris, though the salutary condition of the climate should render it far less common."

If the death-rate from consumption was the same in Naples at the time segregation ceased as it was in other cities in which segregation was not practiced, it is self-evident that such a measure can have no influence in diminishing the death-rate from this disease.

Dr. JAMES TYSON said: I had intended to say something this evening on this important subject, but almost every point which occurred to me has been so well treated by others that I hesitate to add anything. I admit all that has been said with regard to the contagiousness of phthisis, as determined by experiment, but as to the actual spread of consumption from one person to another as the result of association—as to the degree of contagiousness, in a word—I agree entirely with Dr. Da Costa. Admitting the correctness of Dr. Flick's studies and Cornet's observations, it still comes to this: that the physician is competent to take care of this question without the intervention of the board of health. Just as the surgeon is qualified to take care of the matter of antisepsis and asepsis in his management of surgical cases, so the physician is competent to take care of the disinfection of utensils used by consumptives and the destruction of the germs which may be the cause of the disease, the more especially as such disinfection is acknowledged to be of the easiest kind. What Dr. Roberts has just said with regard to the situation ten years ago as to sepsis and antisepsis could as well be alleged in favor of the position that I take—that the physician is competent to handle the difficulties. The surgeon did not call in the board of health to help him under like circumstances, but fought the battle alone, and won it triumphantly. The question has been studied experimentally and chemically, and we know exactly where to put our fingers to check the spread of consumption as far as this is possible. We must attack the disease in two ways: First, the contagion must be destroyed as far as possible with the means at our disposal, and, second, we must seek to change the soil on which it is known that the bacillus flourishes by improving the general health of the individual, and thus increase his ability to repel the invader. I feel that we are entirely competent to handle this question without the aid of the board of health.

Dr. ABBOTT said: I have listened with much interest to both sides of the discussion, but must confess that I am not yet quite sure in my mind as to the proper course to be pursued. I am strongly inclined to the views expressed by Dr. Billings in his letter to the president. Tuberculosis is a widespread disease with manifold expressions, and if our efforts are to be directed against it, in the full sense of the term, the problem is certainly beset with many difficulties.

In connection with the subject under discussion, the question that has constantly presented itself to me is: If the college sees proper to recommend that all houses in which the disease is located are reported to the authorities, has it any guarantee that their conditions will be improved? The object in reporting these houses is to secure complete disinfection of them, a process requiring conscientious attention to most minute details, to say nothing of a full knowledge of the requirements of the cases. If the board of health is in a position to assure us that these demands can and will be met, then I am in favor of the resolution. If not, then we have had a long discussion with but little result.

The ultimate object arrived at in the resolution I consider as most desirable, but will it be attained if the resolution is passed? We have abundant evidence in justification of the belief that localities occupied by persons suffering from the pulmonary form of tuberculosis, particularly, may and do become centers of infection, and it is highly desirable that such places should receive the attention that their character demands. Much has been said here this evening concerning the prevention of the spread of this disease by disinfecting the sputum, and this point has been accentuated as if the danger ended here. The danger does not end here. Sputum collected in a receptacle may remain perfectly harmless without disinfection or any other treatment whatever. The danger lies in the sputum *not* collected, but spat upon the floor, dried, ground into dust by the feet of passers-by, and ultimately inhaled into the lungs—a condition of affairs often seen in dwellings of the poor. The predominance of pulmonary tuberculosis over other manifestations of the disease is certainly, in part, accounted for in this way. Dr. Da Costa in his remarks has said that "bacilli are everywhere present," and if this is the case how are we to escape them, etc.? His use of the term bacilli in its generic sense is misleading; I can hardly think he meant that *tubercle* bacilli were everywhere present, for this is not the case. They *may be* present everywhere that tuberculous individuals are present or have been present, but to say that they *are* present in all places does not accord with the results of observation.

Dr. FRANK WOODBURY said: The facts collected with so much commendable diligence by Dr. Flick are susceptible of quite another interpretation. They certainly do not prove consumption a contagious disease, or that the *Bacillus tuberculosis* is its sole cause. If he had confined himself to the task of showing that want of sunlight, dampness, and other malhygienic conditions were efficient causes of phthisis, his data would have been equally applicable. Or if he had intended to prove that the habitations of some of the poorer inhabitants of this city were likely to act injuriously upon the occupants, so as to predispose them to phthisis, we might have been willing to go with him almost to any extent in making application to the board of health to destroy these sources of disease. We might admit that by adopting such drastic measures the mortality from tuberculosis would undoubtedly be greatly reduced. The total extinction of pulmonary consumption, under present conditions of civilized life, however, is entirely impracticable.

It may be admitted, if the proposed plan of registration and inspection were rigorously carried out, that the results would apparently support the claims of the author. The number of cases reported would certainly diminish to a remarkable degree; but the real explanation, however, of the diminution would be that a large number of cases would be concealed, and deaths would be reported as from other causes. Moreover, a large number of cases would object to the solicitude of the board of health for their welfare and leave the city. Physicians would have their sympathies appealed to by relatives, who might wish to conceal from the patient the fatal character of the malady, and would be in a dilemma between duty to their patients and duty to the State. In fact, registration would eventually divide physicians into two classes—those who reported their consumptive patients and those who did not. The physicians having the reputation of not reporting their cases would naturally have a larger *clientèle* than the others.

The discussion of the registration of consumption manifestly brings up the question of the nature of phthisis. It is true that there are other clinical conditions which resemble tuberculosis of the lungs and which are not due to the presence of tubercle bacilli. Assuming, however, for the moment that all cases of consumption are tubercular, we may ask how large a part in disseminating the disease is played by contagion? We know that Dr. Brush calls attention to an infected milk supply as the principal source of tuberculosis in our cities. Bowditch showed conclusively that dampness of the soil was a very powerful factor in the causation of phthisis. Other authors maintain that it is mainly due to inheritance. If these views may be regarded as well established, then the infection sinks to a secondary place. If tuberculosis is the *pébrine* of the human race, as has been stated, this invites a consideration of the subject from the standpoint of comparative pathology. If phthisis is analogous to the fungous diseases of the lower animals and plants, then the results of treatment in the latter may throw light upon the therapeutics of human tuberculosis. In a communication made by Dr. George B. Wood, in 1869, to the American Philosophical Society he referred to a discovery which he had made, and which, I think, has a very important bearing upon this subject. He proved by experiments upon a large number of fruit trees, which were prematurely dying by progressive decay (now recognized as some form of fungous disease), that by simply adding potash to the soil the trees were restored to their early vigor, and they resumed fruit-bearing; in fact, the crops were larger than ever before, "many branches breaking down with their load of peaches." This is a striking illustration of the importance of supplying to the soil some chemical agent which may be deficient, rather than devoting our time and energies to the destruction of germs. Pulmonary consumption certainly is curable. How many have been cured solely by an antiseptic or a parasiticide treatment? Not one; but many have been restored to health by hygienic methods alone.

Recent investigations into the ætiology of tuberculosis seem to lead us away from the germ theory, and to point to the fact that in the tissues of the phthisical patient some chemical agent is deficient, which, if we can supply, the symptoms will disappear and the case will proceed to recovery. This agent may not be the same in different patients. Cases of consumption have been cured by the hypophosphite treatment advocated by Churchill; others have been restored to health by alcohol; yet others have been equally improved by drinking blood at the abattoirs or by eating raw beef. Cod-liver oil, advocated by Bennett, seems to supply the needed element in some; an abundant milk diet has been successful in others. The agent may be a simple salt like lime hypophosphite or sodium phosphate, or organic in its nature like tuberculocidin or nuclein. Whatever it may prove to be, one thing is certain, that the results from following out this lead have been more successful than those from parasiticide treatment. They do not strengthen the argument of those wishing to class tuberculosis among contagious diseases.

I might point out the fact that if the board of health should force physicians to make a diagnosis this would involve the compulsory use of all modern methods, including the microscope and culture-tubes. The fact has just been announced that ex-Vice-President Morton's fine herd of Jersey cattle, recently exhibited at the World's Fair, has been found to be infected with tuberculosis. It is said that the animals presented no symptoms of disease whatever, and the diagnosis was made by the subcutaneous injection of tuberculin. Can physicians be compelled to resort to this in all suspected cases in the human subject?

Dr. S. Solis-Cohen said: The question to be considered is simply this: Granting all that may be said concerning the ætiological relations of the bacillus of Koch to tuberculosis, and granting all that is said as to the spread of infection from persons affected with tuberculous disease—on the whole, will the health and comfort of the community, including both the well and the sick, be better promoted by having all cases of tuberculosis registered or by not having them registered? So far as the sick are concerned, the disadvantages of registration are obvious. So far as the well are concerned, my distinguished teacher, the vice-president of the college, has shown that the reasons advanced in support of the proposition that it is necessary to have cases of tuberculosis registered in order to protect the health of the community, can not withstand critical analysis. I believe, moreover, that registration would be a detriment to the community, for the reason that when of two measures to prevent an evil, attention is concentrated on the less efficacious, the more efficacious is likely to be neglected. If we direct our attention too strongly toward germicidal measures we shall lose sight of the more important measures that relate to the general sanitation of cities, of houses, and of individuals. Tuberculosis among men is to be prevented by increasing the vitality of the race, by preventing the marriage of tuberculous and otherwise unfit persons, and by perfecting the sanitary environment and life of the individual. The true prophylaxis against tuberculosis begins, therefore, before conception; but as society has not reached the stage of development where such prophylaxis can be generally instituted, it becomes all the more necessary to insist upon those practical measures of individual and civic hygiene which must be our greatest dependence and to oppose whatever shall tend to obscure their importance.

As has been said by Dr. Woodbury, if Dr. Flick had started out to prove that consumption flourishes in overcrowded places and where misery, poverty, filth, and vice are congregated, his statistics could not be more admirably adapted to enforce that conclusion; but to prove that tuberculosis is contracted only or chiefly by living in houses in which persons having tuberculosis have previously resided, would require that a census be taken to find out concerning every house in the city whether at any time there had been a patient with tuberculosis living or dying in the house, and if so, how many cases had followed and at what intervals, and also to determine how many cases of tuberculosis had developed among those living in houses where no one having tuberculosis had previously resided. Until statistics of this character are at hand, the case against the so-called infected houses, in districts where the city, the houses, and the lives of the people furnish so many potent causes of impaired vitality, is at least "not proven." But grant that the proof of infection in houses is conclusive. Suppose that the houses are thoroughly disinfected, and even, referring to Dr. Wood's point, guarded against reinfection—what have we gained? We are told—and I invite correction from Dr. Abbott, if I am in error—we are told by the highest authorities that the bacillus of tubercle is about us everywhere. It exists, save at certain altitudes, or upon the sea, or in other specially favored regions, in the air we daily, momentarily breathe. Every one is at some time exposed to the danger of inhaling it, and that it is inhaled by everybody is shown by the results of autopsies upon persons having no tuberculosis elsewhere, but in whom the bronchial glands are infected with the tubercle bacillus. I believe that, according to some statistics, the proportion of persons so infected has been placed at fifty per cent. Is it not clear that, as was said by the president of the college in his annual address, in order to make the board of health laws effective, there would have to be instituted a system of espionage so that the tuberculous patient could be followed every day from the time of his rising up to that of his lying down, while seated in his house, or while walking by the way, to make sure that by no possibility should his sputum be deposited in any place where it could become dry and be carried into the air—a thing which is manifestly impossible? But if instruction only is to be given and no such rigorous supervision of individuals attempted, it is within the province and within the power of the attending physician to instruct his patients, and the intervention of the municipal officer is not required.

Therefore, because of the impracticability of this registration to effect anything positively, and because, negatively, it will have the effect of diverting attention from the fact that these streets or alleys, to which Dr. Flick directs our attention, should be cleansed and widened, the houses properly drained and ventilated, the people properly fed and clothed, and otherwise protected from exhausting and depressing influences, I consider it to be the duty of the college to place its strong word on record against the proposed legislation.

Were the proposition in favor of a municipal hospital for tuberculosis, separated from the other recommendation, and properly safeguarded, I should be glad to vote for it.

Dr. **Richard A. Cleeman** said: One very important point has not been alluded to. Statistics show that the death-rate from the disease is almost the same in every community, year after year. If there is any diminution, it is very small. This is directly opposed to the idea of the contagiousness of the disease. All other contagious diseases vary very much in their death-rate at different times. There is only one explanation by which we can conceive that phthisis is contagious and the death-rate always the same, and that is that the whole of the community is thoroughly infected with the tubercle bacillus, and that in the community there is a fixed number who are susceptible to the disease. Just as, statistically, we can calculate how many giants or how many dwarfs are in a community, so can we estimate the number of persons susceptible to phthisis.

In this view of the case, with the *Bacillus tuberculosis* spread over the whole city, measures to be effective must be of a very extensive character. The mere reporting of a case now and then—for I believe the rule will be often neglected—will have very little effect. Measures to be effective must be thorough, and they are the methods of general hygiene.

Dr. **James B. Walker** said: We must look at the practical side of this matter, and ask what will be the benefit from registration? How much has typhoid fever in this city been diminished by the fact that we report our cases? Not in the least. The disinfection of the stools which the physician has directed has lessened the number of cases, as similar attention to the sputum may in phthisis. I am against placing phthisis on the list of diseases to be reported, for many reasons. I do not believe that this would confer a single benefit upon the city or its inhabitants. The physician is capable of doing all that the board of health can, without the manifold evils and annoyances of public registration. The college should go on record against the registration of the disease. It should go on record also as believing that the disease is possibly contagious, and should recommend physicians to use the most strenuous efforts to prevent the transmission of the contagion.

Dr. **Da Costa** said: I said that the tubercle bacilli were everywhere. A bacillus that is on the pavements and in houses, that is wafted about in the air, that exists in milk and on fruit sold in the markets, and, as has recently been demonstrated, on the very money that we handle, may well be described as a bacillus that is everywhere. The tubercle bacillus is so diffused that it can, indeed, be considered as everywhere present, and it is scarcely a figure of speech to so describe it.

With every word that Dr. Roberts has said I agree. There is not a direction he has read I would not subscribe to and endeavor to enforce as an officer of an institution or in private life. I hope, indeed, that every fellow will go away to night imbued with the necessity of carrying out all the measures that have been brought forward with the view of destroying this scourge. But is it not better that we should do this as individual health officers than to have it done in a necessarily perfunctory manner by a board of health? The only way that the board of health could radically act to destroy the tuberculous material would be to burn every house that was supposed to be really infected, separate the tubercular husband from the wife, take every child away, and cause such an upheaval in society as no community would submit to.

Dr. **Flick** said: Dr. Williams, of the Brompton Hospital, has been quoted as an opponent of the theory of contagion, but he has written a paper in which he shows that a large number of nurses of the Brompton Hospital have contracted tuberculosis. I think that he has traced some fifteen or twenty cases.*

As to the ubiquity of the tubercle bacillus, Koch and Cornet have disproved it. They have shown that the contagious environment of tuberculosis is limited. Cornet has made experiments with dust taken from the streets and many other places at random, and was unable to produce infection by inoculation. He has, moreover, made an investigation of the health of the street cleaners of Berlin and has found them freer from tuberculosis than any other class. It must be borne in mind that the isolated cases of infection of fruit and other articles which have been referred to are traceable to handling by consumptives. Many of the fruit-stand dealers have consumption.

With regard to the endeavor to ascribe the occurrence of the disease in certain houses to dampness, that can be disposed of in a moment. If you will take one of the worst-infected streets in the Fifth Ward, say Bay Street, you will find that at least twenty per cent. of the houses have not had a death from tuberculosis, although the sanitary condition is as bad as in the infected houses. Dampness can have no influence here.

As regards infection in hospitals, as I have said, Dr. Williams has written a paper in which he shows that fifteen to twenty nurses have contracted the disease in the Brompton Hospital. Cornet has written an elaborate history of hospital infection. He has taken the general hospitals of Germany in which the nurses are permanent, and he finds that as high as sixty-two per cent. had tuberculosis. In my own class of residents at Blockley, sixteen in number, two died within three years of the disease, and I myself was believed for a time to be a victim.

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* *British Medical Journal*, September 30, 1882.

It has been argued that we ought to trace the history of these houses for a longer period, say a hundred years. There is a limit to the infecting power of tubercle contagion. What its duration is I can not say; probably not very long. Unless cases occur within a few years of each other to keep up the chain of infection, the houses are no longer infected houses.

Italy has been quoted as an evidence of the non-effectiveness of preventive measures. I am surprised that this quotation is made so frequently after what has been written. Those who have seen my paper on tuberculosis in Italy will be in a position to refute this statement. I proved in that paper by careful quotations from contemporary authorities—and authorities that can not be doubted—that at the time when the laws were instituted, in 1782, the mortality was about 10 per 1,000, and that when the preventive measures were abandoned, the mortality was so low in the extreme southern part of Italy that it was practically *nil*—0·19 per 1,000. As a result, the mortality was reduced from 10 to a fraction of 1 per 1,000. Many who have written upon the subject have overlooked the fact that it is not Naples, but the Kingdom of Naples that is spoken of. This comprised the southern half of Italy and Sicily. At first the northern part of Italy opposed the view of contagion and refused to accept any preventive measures. After some years it adopted preventive measures, but even at this day the mortality in the northern part of Italy is twice what it is in the southern part. These preventive efforts proved another point, and that is the local infection. The only practices that were of any benefit in the Kingdom of Naples were, first, isolation; and, second, compulsory disinfection. The preventive measures circled entirely about the household. The Italians did not know where the infection came from, but adopted crude measures of prevention. Yet with their crude measures they reduced the mortality to a minimum, and, except for the fact that Italy became a health resort for consumptives, it probably now would have no tuberculosis. If you will study the statistics you will find that those parts of Italy that are health resorts for tubercular patients increase the mortality. This has been as high as 4 per 1,000 in some of the resorts; but if you take the rest of the Kingdom of Naples, the mortality is a fraction above 1 per 1,000.

As to the competency of the physician to meet this question. In connection with this subject, we must bear in mind that every infectious disease is a law to itself. It is not fair to apply to tuberculosis the laws which govern diphtheria, small-pox, etc. The infecting material in tuberculosis is easily controlled. It comes from a single source. In small-pox it is difficult to control. If it were possible to sterilize all the sputa of consumptives we should not need disinfection. Such a thing is impossible, however, and therefore it is necessary that the room be disinfected. This requires great care, and, unless the family is willing to undergo the expense, it can not be accomplished. If the physician were to devote half of his time to bring about proper disinfection he could not do it effectively.

Dr. Cleeman has advanced an argument against contagion which, strange to say, has been made for the other side by Dr. De Forest. Dr. De Forest maintains that, inasmuch as the number of infected houses is limited, the mortality-rate should remain the same every year, because the number of exposures remain the same. The centers of infection remaining the same, the deaths should remain the same.

Tuberculosis and typhoid fever have been compared. The reporting of typhoid fever can not bring about any results unless the lessons taught are acted upon. If the water supply were made better we should have no typhoid fever. There is no analogy between typhoid fever and tuberculosis. Tuberculosis is infectious from the point at which it exists; typhoid fever infects our drinking water. There is little danger from the room occupied by the typhoid-fever patient. The cases are not at all analogous.

After further remarks by various speakers, a vote was taken, and the original resolutions, as proposed by the council, were adopted, and the president was requested to appoint a committee of five to present them to the board of health.

Miscellany.

Hotel Hygiene.—At a recent meeting of the *Société normande d'hygiène pratique*, the proceedings of which are reported in the *Normandie médicale* for January 15th, M. Percepied read a paper on the transmission of infectious diseases in hotels, where the bedrooms are occupied in turn by invalids and healthy persons. It is principally in reference to the watering places or the winter resorts that the attention of physicians and of the public has been aroused, he says, and in a number of resorts the suggestions mentioned in his paper have been adopted and have given rise to reforms, still in their infancy, but destined to extend rapidly. It is a great mistake, in his opinion, to limit hygienic precautions to health resorts only; all hotels, whatever they may be, should have the same rigorous care. The condition of health of the people received at these hotels is not known, and, granting that acute infectious diseases are relatively rare, it is certain that invalids with chronic diseases, such as tuberculosis, are frequent patrons, and the fact that the majority of the travelers remain only a short time can not be brought forward as an argument. They have the right to remain as long as they please, and they also have the right to demand that all sanitary precautions shall have been taken in the rooms that they occupy.

The subject under discussion applies only to travelers, although there is much to be said with regard to hotel kitchens and lavatories, and, above all, to the condition of health of the cooks and the other employees who live there. M. Percepied confined himself to saying that kitchens should be provided with draught flues, and be sufficiently well ventilated for the odors not to pervade the hotel.

Infectious diseases are due to germs that are very unyielding and retain their virulence for a long time, and these germs may be in every part of a room that has been occupied by an invalid; in the bedding, as well as on the walls or on the floor. Knowledge of these facts imposes the necessity of modifications in order to render the rooms habitable and free from danger to those occupying them. First of all, the room should afford air in proportion to the number of persons occupying it, and should be well ventilated and sunny, for the importance of sunlight and air as hygienic factors is well known. The walls should be hard-finished or coated with an impermeable paint which can be washed, and, so far as possible, all corners should be rounded to make them accessible to washing. Moldings, unless rounded, should be discarded. Carpets should be rigorously prohibited, and a parquet floor which can be washed substituted, or a covering of linoleum of an artistic and pleasing design used. An advantage to be gained by this is the abolishing of the spaces which always exist between the boards of an ordinary wooden floor. If the traveler desires to be more comfortable, he can have a movable carpet or rug, on condition that after his departure it is beaten and passed through a disinfecting bath before it is used again. The same precautions should be taken with regard to carpets. In rooms that are not very much used a heavy linen covering can be substituted for carpets, which can be sent to the wash like clothing. For the same reason curtains should not be tolerated, except those that can be washed. White ones are preferred, as the monotony can be relieved with a border of embroidery in bright colors. Heavy materials, like plush and velvet, should never be used. The furniture should be very simple in design, so that it can be cleaned easily. Wooden furniture, wardrobes, bureaus, and toilet tables should be varnished or waxed, or, if preferred, lacquered. Chairs should have caned bottoms. Thus it is possible to conform strictly to hygienic laws, and at the same time preserve an artistic appearance. Everywhere, where it is possible, brass or iron bedsteads should replace those of wood. Toilet articles, especially the glasses, should be washed every day with the greatest care. After the departure of a patron they should be washed in an antiseptic solution, such as a half-per-cent. solution of corrosive sublimate, and the bedding, towels, etc., boiled in alkalinized water. With regard to the means of lighting hotels, electricity is to be preferred, although that is a question of secondary importance. The heating should be with wood, coal, or coke.

After a room has been occupied by an invalid, all the bedding and other linen should be sent to the disinfecting bath, and the walls, boards, and furniture submitted to antiseptic washing and antiseptic spraying. These precautions should not only apply to the bedrooms, but extend to the different rooms that the patrons have used, although with less strictness. The curtains of the parlors, where they remain but a short time, do not require such rigorous treatment. Nevertheless, draperies should be avoided and carpets prohibited. The same precautions should be observed in the dining room. Here particular care should be given to the washing of the glasses, the forks, and the spoons. The former, after each meal, should be washed in an antiseptic liquid, and afterward well rinsed in clean water, and the latter in boiling water.

The vestibules, halls, and stairways should be without carpets and should be wiped every morning with a cloth wet with an antiseptic liquid. The closets should be large and well ventilated, and have proper appliances for flushing.

These precautions should extend to the rooms of the employees, where the sanitary conditions should be under the strictest surveillance. As soon as a case of sickness is discovered isolation should be practiced in order to take the necessary precautions as regards disinfection. These are the measures, the author says, which should be resorted to at the present time, and failure to do so shows a culpable indifference.

At first it may seem that these precautions would be a source of expense to the hotel keepers, but the abolishing of curtains, carpets, and furniture covered with rich silks and velvets will prove economical for them in the end, and, if they are properly carried out, any danger of infection will nearly always be averted.

Pericardial Symphysis in Children.—In the *Union médicale* for January 16th there is a summary of an article by M. Mussy, published in *La Médecine moderne*, in which the author states that pericardial adhesions may exist in early infancy and in the new-born, but their frequency increases very much after the age of eight years. The cause is always a rheumatic or tubercular pericarditis. Total blending of the layers, unless it is very firm, does not embarrass the expansion of the heart, but, on the other hand, partial adhesions may involve numerous functional disorders. The signs of it are not very distinct, and often the condition is not ascertained before death. Hypertrophy is far from being the rule; when it exists, it affects the ventricles more particularly. The diastolic impulse is enfeebled or absent; it may be replaced by a diastolic souffle at the base, which is attributed by M. Potain to evaporation of the blood in a heart dilated and fixed. Changes of posture do not cause the position of the apex of the heart to vary, and that is an important sign if associated with absence of a retreat of the heart from the wall of the chest during inspiration. Systolic depression of the precordial region which replaces the impulse of the apex is characteristic, but this depression may exist in cases of aortic disease without cardiac symphysis. Effacement of the veins of the neck during diastole and sinking of the infraclavicular fossæ have been noted by Ferichs. The murmurs that are heard on auscultation depend upon lesions of the orifice, which are often developed simultaneously with the pericarditis under the influence of the rheumatic diathesis. Considerable value is to be attached to a reduplication of the sound at the base of the heart when it is not accompanied by a presystolic rolling sound and by the other usual signs of mitral stenosis. The course of the disease is variable. Sometimes it involves only occasional palpitation or dyspnœa, or gives rise to no symptoms at all, while in other cases it is manifested by intense dyspnœa, pulmonary congestion, swelling of the jugular veins, and œdema of the lower limbs or anasarca. It finally leads to true cardiac inadequacy, and death supervenes amid attacks of asystole. A matter of the first importance is the condition of the muscular structure of the heart, and the utmost pains should be taken to avoid everything that might overtax the organ. Every excessive exertion, as well as every excessive indulgence in eating, constitutes a danger. The patient should avoid copious meals and derangements of digestion, for the purpose of warding off the reflex effects upon the heart which are so frequent, and functional overactivity of the myocardium. The disease itself is not amenable to therapeutics properly so called; we are restricted to preventing or combating asystolic accidents. The application of revulsives, chiefly blisters, to the precordial region may to a certain extent impede sclerosis of the muscular structure of the heart.

The New York Academy of Medicine.—The programme for the meeting of Thursday evening, the 15th inst., included a paper on Scurvy in Children, by Dr. W. P. Northrup, and one on Scorbutic Pseudoparalysis, by Dr. Henry Ling Taylor.

At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 19th inst., a discussion on the Management of the Iris in Simple Extraction of Cataract will be continued, and Dr. Alexander Duane will read a paper on Paralysis of the Superior Rectus and its Bearing on the Present Theories of Insufficiency.

At the next meeting of the Section in General Medicine, on Wednesday evening, the 21st inst., Dr. Adolph Zeh will read a paper on the Dietetic and Therapeutic Management of Typhoid Fever.

At the next meeting of the Section in Surgery, on Tuesday evening, the 27th inst., papers will be read as follows: A New Operation for the Radical Cure of Inguinal Hernia, by Dr. A. M. Phelps; A Method of Differential Diagnosis in Œsophageal Stricture, with the Report of a Case, by Dr. H. Lilienthal; and The Production of Iliac Intussusception with Carbonate of Sodium, by Dr. R. T. Morris.

DR. BORDEN'S ARTICLE ON THE FAT CELL.

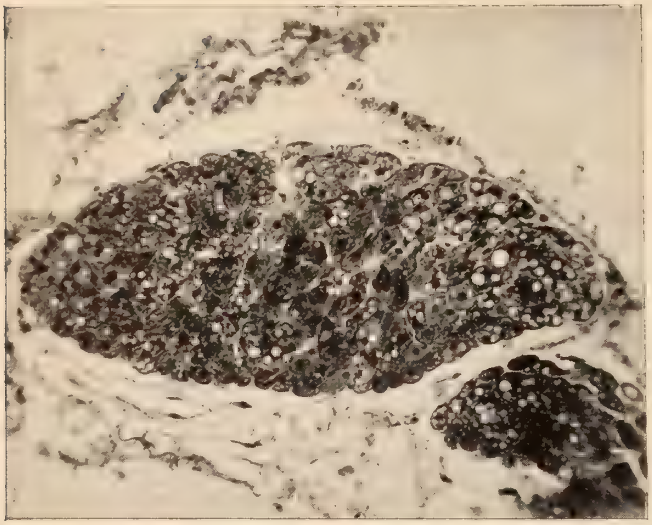

Fig. 4.—Subcutaneous fat body of a fœtal cat at term, from a section parallel to that shown in Fig. 3. From a photomicrograph, × 125 diameters.

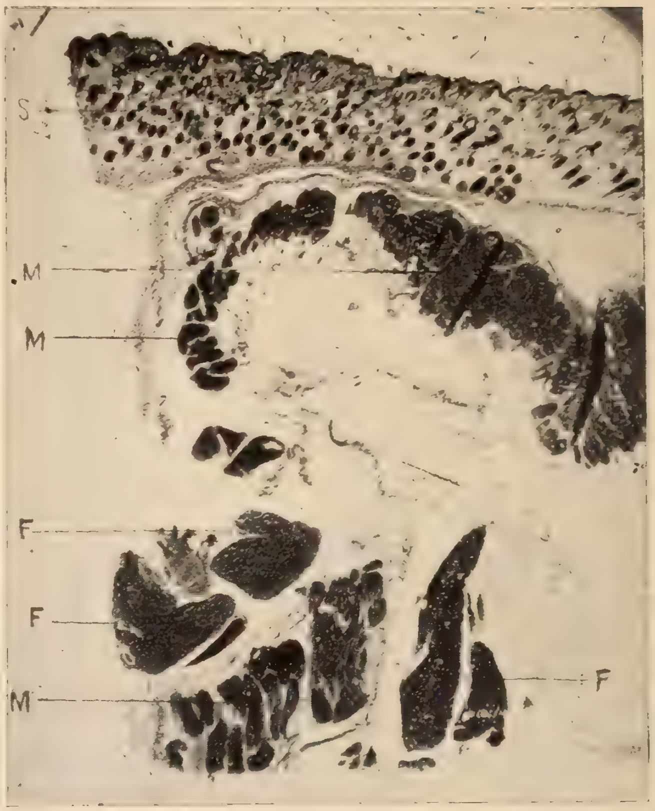

Fig. 3.—Skin and subcutaneous tissues of a fœtal cat at term. S, skin, cut somewhat obliquely, owing to curling of the tissue while hardening; M, M, muscular tissue, "panniculus carnosus"; F, embryonal fat masses. From a photomicrograph, × 25 diameters.

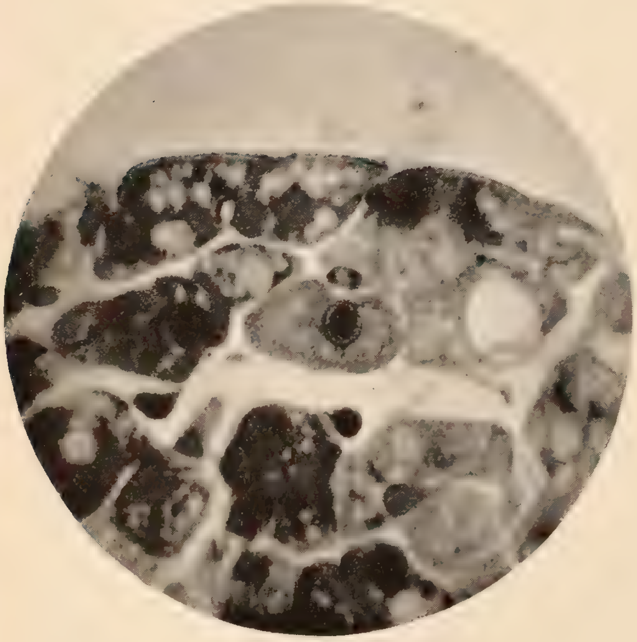

Fig. 5.—Young fat cells from the subcutaneous fat body of a fœtal cat at term. From a photomicrograph, × 750 diameters, with Bausch and Lomb $\frac{1}{12}$-inch h. i. objective and amplifier. The focus was adjusted for the central cell.

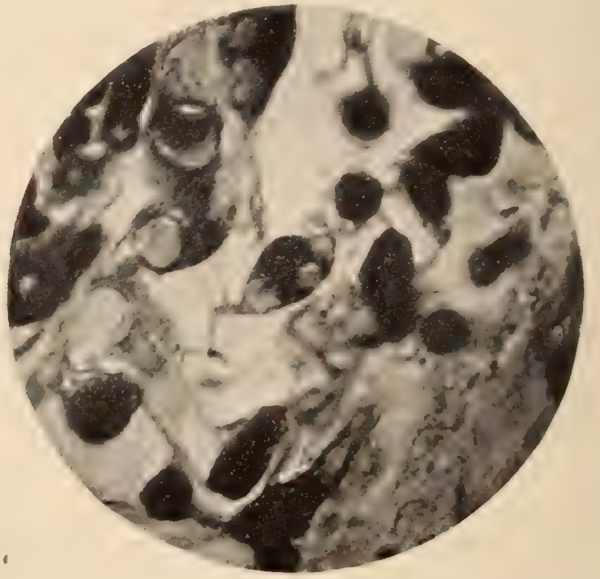

Fig. 6.—Young fat cells near the hair roots in the skin of a fœtal cat at term. The focus was adjusted particularly to show the central cell and its processes. There are three fat droplets in the body of the cell. From a photomicrograph, × 1,000 diameters, with Zeiss's 2-mm. apochromatic objective and projection ocular 2.

Original Communications.

THE FAT CELL:

ITS ORIGIN, DEVELOPMENT, AND HISTOLOGICAL POSITION.

By W. C. BORDEN, M.D.,
CAPTAIN, MEDICAL DEPARTMENT, U. S. ARMY.

The apparent simplicity of development of the fat cell would seem to make the task of tracing it back to its original cell form, and so determining its origin, an easy one. That this is not the case is evinced by the fact that observers are still far from agreeing what its original cell form really is. Of the many views advanced, those which assign its origin to some form of connective-tissue cell are most widely accepted and almost exclusively presented by writers upon histology and physiology.

My investigations, however, have led me to believe that these views are incorrect, and that they have given rise to erroneous ideas concerning the histological and physiological position of the fat cell.

As the facts which have led me to these conclusions are derived from observations upon fat tissue in fœtal and adult, higher and lower vertebrates; it will be necessary to briefly summarize the facts of histology, embryology, and comparative anatomy relative to the form and occurrence of this tissue.

Fat tissue, or adipose tissue, as it is generally technically called, consists of aggregations of the distinctive fat cells bound together by a small amount of connective tissue and of the necessary vascular, lymphatic, and nervous supply. In the higher vertebrates it is found in various parts of the body in masses of all manner of sizes and shapes adapted to the various situations. The larger masses are divided by intervening connective-tissue sæpta into lobes, and these lobes are in like manner subdivided into lobules. The blood supply is very abundant. Each lobule has an afferent arteriole which subdivides into a meshed capillary network, the capillaries again uniting into an efferent vein (Fig. 1).

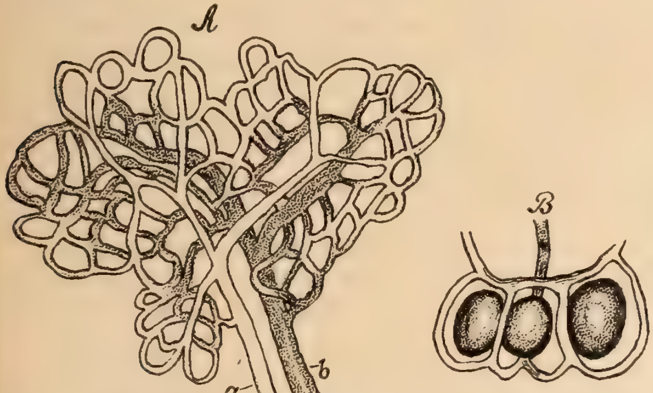

Fig. 1.—Vessels of the fat cell. A, arterial (*a*) and venous (*b*) branches, with the capillaries between them; B, the capillaries around three cells. (Frey.)

Even in the intermuscular spaces and like places where adipose tissue occurs as groups of cells having no distinct lobular formation, a capillary reticulum is present; and whenever a new formation of fat cells takes place, a more or less distinct capillary network is developed, according to whether the formation consists of few or many cells. The resemblance between the vascular supply of adipose tissue and that of the secreting glands—such as the parotid, pancreas, and others—is most marked; for in all the vascular supply is abundant and is so distributed that each cell, whether it be parotid, pancreatic, or adipose, is in direct relation with one or more capillaries. This gland-like blood supply of adipose tissue is important when considering the histological position of this tissue, and will be again referred to farther on.

While adipose tissue is scattered through the body in the higher vertebrates apparently without design, this is not really the case, for certain regions are particularly characterized by its presence, and in others it never occurs. It is particularly abundant in the subcutaneous connective tissue, the omentum, around the kidneys, and notably in the hump of camels, which latter consists of a large fat deposit and is not in any way due to a deviation of the vertebral column. On the other hand, although connective tissue is abundantly present, fat tissue never occurs in the eyelids, penis, scrotum, nymphæ, submucous tissue of the intestine, or cavity of the cranium. Of these, the most notable instance of the limitation of fat extension is furnished by its absence from the submucous layer of the intestines, to which it never extends, though it is abundantly present in the mesentery, and at the junction of the latter with the intestine the fat deposits in it are separated from the submucous tissue of the intestine by the thickness of the muscular walls of the intestine only.

In the lower vertebrates adipose tissue is not scattered through the body at all, but is confined to certain definite localities where it is collected into gland-like bodies called "fat bodies," or "corpora adiposa." In the frog, the fat bodies are in the abdominal cavity in close relation with the genito-urinary organs. In the necturus there are subcutaneous fat tracts on the dorsal and ventral parts of the body. In the toad, besides two abdominal fat bodies like those of the frog, there is an accumulation of fat about the base of the heart, and there are six fat bodies beneath the skin on the ventral surface of the body—one at the junction of each limb with the body and two at the base of the neck. It may be considered that the intra-abdominal fat bodies of the frog are homologous with the fat masses about the kidneys of higher vertebrates, and that the subcutaneous fat tracts of the necturus and the subcutaneous fat bodies of the toad are homologous with the panniculus adiposus of higher vertebrates. It at first appears somewhat strange that while in the lower vertebrates adipose tissue is confined to certain localities, there being formed into ductless glands, as we rise in the animal scale it is not so confined, but is scattered through the body apparently in a much less purposive way. This is seemingly at variance with the general rule that segregation of like tissues is coincident with higher development. This rule, however, of necessity yields to the requirements of the organism; and the following is suggested as a probable reason why fat tissue occurs in different localities in different animals and is scattered through the body in higher vertebrates, instead of being confined to definite localities, as in the lower.

In the lower vertebrates the amount of adipose tissue relatively to the size of the entire body is small; but *pari passu* with the rise in the animal scale the relative amount of adipose tissue increases, until in the higher vertebrates its proportion to the body is large. If the fat tissues of a mammal—man, for instance—were collected into two abdominal organs, as in the frog, the abdomen would have to be enormously increased in size in order to contain them, and such localized deposition of the fat tissues would greatly, if not vitally, interfere with the existence of the organism. In fact, the localized deposition of the fat tissues, if adhered to in vertebrates, would prevent in the higher types that symmetrical development of the body which is so necessary to bring it into proper relations with its environment. It appears obvious, therefore, that as the more highly developed organisms were evolved, requiring increased amounts of adipose tissue for nutritive purposes, the only way to dispose of the increased tissue was to distribute it throughout the body, filling in the connective-tissue interspaces and spreading it out in the panniculus adiposus, for in this way only could it be so co-ordinated with the body as not to interfere with organic existence or symmetry.

As the spaces filled in were those previously occupied by connective tissue, it was natural to infer that that tissue was changed into adipose tissue. This view has been strengthened by observations on starved and fed animals and on the development of fat cells in connective-tissue spaces until the theory that fat cells are developed from connective-tissue cells has gained wide credence. So high an authority as Schäfer, in the last (tenth) edition of Quain's *Anatomy*, vol. i, part ii, page 237, says: "It (fat) is deposited in the form of minute granules or droplets in certain cells of the connective tissue"; and Foster, in the sixth and last edition of his *Physiology*, part ii, page 770, writes: "It is obvious that a fat cell is a cell belonging to connective tissue, in the cell substance of which fat has collected. . . ." But, notwithstanding the seeming conclusiveness of such statements, my investigations have led me to the belief that they are based upon incorrect data, that they do not assign a proper or sufficiently important place to the fat cell, and that *the fat cell is a special cell having nothing in common with connective tissue, and that it is essentially a gland cell having special metabolic functions.* In support of this conclusion, the facts of comparative anatomy, embryology, and physiology relative to adipose tissue must be considered; and, in addition, the form of the fat cell at *all* stages of its existence must be known and taken into account.

The fat cell in its fully developed and functionally active state may be described as a protoplasmic, nucleated sac, the cavity of which is filled by a single drop of fat. The nucleus is about 7 μ in diameter, and near it the cell protoplasm is thicker than at other parts surrounding the fat. A cross section of such a cell through the nucleus has been likened in appearance to a signet ring—the signet representing the nucleus; the thickened metal setting of the signet, the accumulation of protoplasm about the nucleus; and the thinner band, the extremely thin protoplasm covering the fat drop (Fig. 2, C).

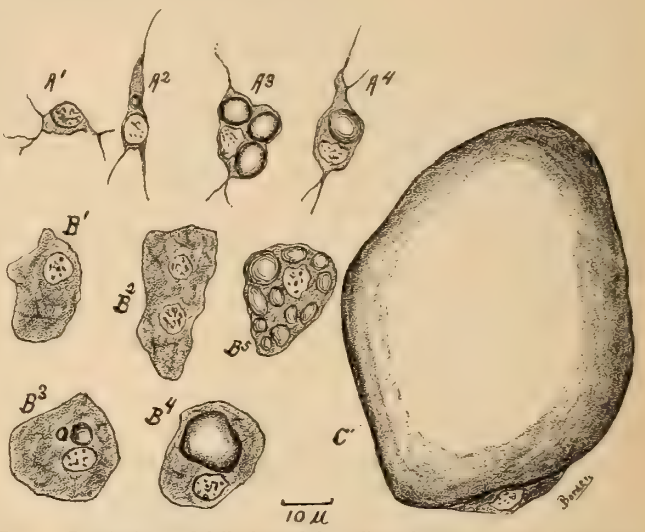

FIG. 2.—Developing and fully formed fat cells and the two types of cell from which fat cells originate. A^1 to A^4, development from the so-called connective-tissue-cell form; B^1 to B^5, development from the gland-cell form; B^2, gland-cell form with two nuclei preparatory to cell division; A^2 to A^4, B^3 to B^5, cells with single and multiple deposits of fat; C, fully developed fat cell. All drawn to same scale with Zeiss's 2-millimetre oil-immersion apochromatic objective and Abbé's camera lucida.

The fat cell is developed into this form from a cell entirely free from fat. The fat is secreted in the cell in gradually increasing quantity by the metabolic action of the cell until the nucleus is displaced laterally by the increasing fat and the distended cell assumes a nearly globular form. But while this is the form of the fully developed cell during nutritive activity in the body of a well-nourished vertebrate, its original fat-free form is very different. What the original form is can not be said to be definitely settled. Observers who maintain for it a connective-tissue origin have described and figured it both as a branched and as an unbranched cell, and have described it as arising from the formed and from the granular unbranched cells of that tissue; others have described it as arising from lymphoid or special plasma cells. Where such diversity of opinion exists, it is obvious that there is opportunity for further investigation; and it is equally obvious that the real origin and original form of the cell must be known before its histological and physiological position can be accurately assigned.

The results of my investigations upon these disputed points are contained in this article, and, as regards the origin and original form of the fat cell, may be formulated as follows:

1. That in the lower vertebrates the fat cell is developed from *one* form of cell, and that cells of this form are developed from special centers in the embryo.

2. That in the higher vertebrates fat cells are developed from *two* forms of cells differing greatly in size and shape.

3. That one of the original fat-cell forms in the higher vertebrates is homologous with the special-center forms of the lower vertebrates; that this form of cell is gland-like;

that it in no way resembles the connective-tissue cell; and that the other form, while closely resembling the connective-tissue cell, is most probably a special cell, derived from the special-center form by cell division and migration.

If the fat bodies of an adult summer frog are examined, the fat cells will be found to present all the characteristics of the fully developed fat cell; but if the fat bodies of a winter frog which has used up most of its stored-up fat are examined, the cells will present a very different appearance. A section of such a body will show a collection of cells, some of which still contain more or less fat, while others are entirely free from it.

Those free from fat closely resemble the liver cells of the same animal. Between the closely packed fat-free cells nothing is visible but thin-walled blood vessels. Fat bodies of almost identical appearance are found beneath the skin of fœtal higher vertebrates. The panniculus adiposus and the fat about the kidneys of mammals have their origin in such bodies. They are seen as rather regularly shaped, gland-like masses, and may be easily found and studied in the fœtal cat at term.

Those beneath the skin first appear on the ventral surface of the body, in the axilla and groin, the regions to which subcutaneous fat is limited in certain of the lower vertebrates.

It will be seen from this that the fœtal cat resembles the adult toad, for both have fat glands in close relation with the kidneys and localized beneath the skin on the ventral surface of the body near the limbs; and that this is in strict accordance with the rule that the fœtal forms of the higher vertebrates resemble the adult forms of the lower.

Fig. 3, from a photomicrograph of a section through the skin of a kitten at term, shows the gland-like masses of fat cells beneath the skin, and Fig. 4 shows distinctly the gland-like form of these cell accumulations. The cells composing these masses are irregularly polyhedral in form and of large size, being from 15 μ to 20 μ in diameter (Fig. 2, B^1 to B^3, and Fig. 5). The nucleus, which measures about 7 μ, is central, or nearly so, and in many cells can be seen to be in active caryocinesis preparatory to cell division (Fig. 2, B^2). The growth of the masses is by means of indirect cell division, the development of the capillaries going on coincidently with that of the cells, as is the case in all gland development.

In the masses the cells will be seen to be in many different degrees of fat accumulation, some entirely without fat, others containing many fat droplets still separated from each other by intervening cell protoplasm, while in others the fat drops have coalesced into one and the cell nucleus has been more or less displaced laterally.

How utterly unlike these cells are to connective-tissue cells is fully shown in Fig. 5 (from a photomicrograph) and in Fig. 2, B^1 to B^5, drawn with Abbé's camera lucida from the young developing cells of the fat bodies. The central cell in Fig. 5 is a typical fat cell of the gland-cell form before fat formation has commenced. As the focus, when the photomicrograph was taken, was adjusted to give a critical image of this cell, the neighboring cells are somewhat blurred from the objective not being perfectly aplanatic, but it may be seen that they have the same general form and that some of them contain small fat drops. The existence of this distinctive gland-cell form of young fat tissue can be easily demonstrated upon any fœtal mammal of suitable age.

So far as I have been able to determine, this origin of fat cells from gland-like cells in gland-like masses occurs only in the lower vertebrates and in the *fœtal* forms of the higher. In the lower vertebrates it is the only way by which fat tissue originates. In the higher vertebrates, while its first appearance is in special centers with these gland-like cells, a *secondary* origin also obtains. Undoubtedly it is this origin which has given rise to the theory of the connective-tissue origin of the fat cells, for the cells from which fat cells secondarily originate, before any fat is deposited in them, closely resemble connective-tissue cells. But, notwithstanding this resemblance, it is probable that they are cells formed by cell division from the original special-center cells, and that they, by cell migration, form metastatic fat masses in places where fat tissue does not occur in the lower vertebrate types. It is from this secondary form of migrated embryonal fat cell that all fat tissue outside the special-center masses is developed. In this way originates the fat tissue of the omentum and mesentery, that between the muscular layers, and in the many other parts of the body where it appears after or late in fœtal life.

The method of development is for a few of these secondary fat-cell forms to appear in the connective-tissue spaces alongside an already formed blood vessel. A capillary loop develops around these cells, other fat cells form outside this loop, another loop forms inclosing these, and so on, until a more or less distinct lobule of adipose tissue is formed. As it is by this process that new and scattered fat formations occur in the higher vertebrates after birth, it is the one most commonly and easily seen, and has, therefore, been generally considered the sole method by which fat tissue originates. It may be fairly well studied in the broad ligament of pregnant mammals; and if such studies were exclusively relied upon, an observer might well consider the connective-tissue origin of fat tissue established. But, like many other disputed questions in histology, the facts of embryology and comparative anatomy must be ascertained before right conclusions can be reached. If we examine a fœtus of right age, or a lower vertebrate, fat cells, forming in special centers from large polyedral cells only, will be seen; while if we examine an older fœtus of a higher vertebrate, the secondary method will be seen going on, together with the original method. For instance, if a section of the skin of a fœtal cat at term is made through the subcutaneous fat masses in the groin or axilla, as in Fig. 3, in addition to the gland-like cell masses, ~~cells~~ will be found close to the hair roots and capillaries in the bodies of which fat is being deposited. These cells closely resemble connective-tissue cells and are the second form from which fat cells are developed in higher vertebrates (Fig. 2, A^1 to A^4, and Fig. 6).

These cells are much smaller than the special-center forms and of a different shape. They are from 12 μ to 20 μ

long, but are only a little wider than their nucleus, which, like that of the special-center forms, is about 7 μ in diameter. Fat first appears in the cell in one or more minute drops, generally not more than three. As these fat drops increase in size the cell protoplasm (spongioplasm) between them gives way, they run together, forming a single drop which increases in size and displaces the nucleus laterally until the usual form of the fully developed fat cell is obtained (Fig. 2, C). When young—*i. e.*, when fat first appears in them—these cells have processes similar to those of the formed (fixed) connective-tissue cells, though some observers have described them as having none. Had they none, their dissimilarity to connective-tissue cells would be more marked, but processes are always present by the time the cell has become stationary and fat formation has begun. The seeming absence of processes is due to the difficulty of so staining them that they and their connections to particular cells can be plainly made out. They are best shown in thin sections from tissue hardened in Müller's fluid or osmic-acid solutions and imbedded in paraffin, the sections fastened to the slide and deeply stained with Weigert's hæmatoxylin. The sections should be fixed to the slide without cement, otherwise the cement might become stained, so, possibly, giving erroneous pictures. To fix the section properly, a slide is cleaned with a solution of caustic potash to insure freedom from any trace of grease, a drop of water is then put on the slide, the section placed on the water, and the slide placed in the oven of a water bath at 42° C. until all wrinkles have disappeared from the section. The water is then drained off, bringing the section into close contact with the slide, and the slide is then replaced in the oven and kept there at the same temperature as before for twelve hours. The albumin of the section will so fix it to the slide that it may be cleaned of the paraffin and stained in the usual way.

Fig. 6, from a photomicrograph of a section so treated, shows one of the secondary forms from which fat cells develop. Similar cells are found wherever adipose tissue is developing outside the special-center cell masses. Comparison of the cell shown in Fig. 5 with the one shown in Fig. 6 will show most plainly the difference between the two kinds of cells from which fat cells originate. In comparing these figures it must be noted that the amplifications are different, the relative size of the cells being shown in Fig. 2, A^1 and B^1, where they are drawn to the same scale.

So far as the first, or gland-cell form, of the fat cell is concerned, there can be no question as to its entire dissimilarity to the connective-tissue cell; but, as regards the second or metastatic form, it is so similar in form to certain cells of the connective tissue that absolute proof that it is not such a cell is difficult and must rest at present upon the circumstances connected with its first appearance and upon its subsequent function. I have already stated that this second form probably arises by cell division from the first form, and by migration forms new centers for fat-tissue formation. As fat cells are specialized cells, having special and important metabolic functions to perform, and as their original forms are developed from special cells, both in the lower vertebrates and in the embryos of the higher, it is natural to infer that all fat-cell forms have a similar origin. All special tissues arise from embryonal tissues by gradual differentiation, and when they have once reached a highly specialized form, change of form and function does not normally occur. Between cells having metabolic functions and those having supporting functions there is a wide difference, and, with the exception of the fat cell, it is generally considered established that cells having anabolic and catabolic action in nutritive processes do not change their functional form during development. If fat tissue is an exception to this general rule, it is certainly a curious anomaly.

Physiologists have fully demonstrated that fat is formed by the fat cells from substances other than ingested fat. The importance of this physiological action of the fat cells is emphasized by the great vascularity of adipose tissue, which shows that it is an active tissue physiologically; so that, both by its function and its blood supply, it closely resembles the glandular tissues. These facts are of much more importance when considering its true histological and physiological position than is the absence of excretory ducts, for in all these particulars adipose tissue is very like the liver as regards the glycogenic function of that gland. The liver forms glycogen from substances other than ingested sugar and gives it to the organism either as glycogen or in different form. In this function the liver is a ductless gland; the blood-vessels supply the cells with the material for metabolic change and carry away the product formed and given out. In like manner adipose tissue is supplied by its network of capillaries. Not only does the fat cell form fat, but it afterward disposes of it. Although the fully developed fat cell is so distended with fat that its protoplasm is reduced to a thin covering for the fat, it is still functionally active, and is not only capable of forming fat, but it returns the formed fat to the blood either as fat or in some other form. This inverse action requires fully as special metabolic function and activity as is required for the formation of the fat, for according to the varying demands of the system, so must the various fat cells give out the proper supply. In hibernating animals during the hibernating period, the consumption of fat and the consequent inverse metabolic action of the fat cells must be very carefully adjusted to the requirements of the body and to the length of the hibernating period.

The slow physiological giving out of fat is the true fat-reducing method and differs from starvation in that the latter is an entirely pathological process. It is stated by some observers that the fat cells of a starved animal return to a connective-tissue form. This is undoubtedly an erroneous interpretation of structure. I have never been able to obtain the adipose tissue of a hibernating higher vertebrate during the hibernating period for examination, but in the frog the cells of the corpora adiposa never become connective-tissue cells. As the fat gradually disappears from them during the winter months, they gradually return to their original cell form. In this they closely resemble liver cells, for fat is often found in the latter; and when discharged, the cells return to their former shape. In starvation, however, the case is different. Then the fat is so rapidly given out by the distended adipose cells and their own nutrition is at the same time so interfered with that they have no opportunity to return to their original form. The cell walls fall toward each other like the walls of an emptied bag and in sections of tissue give an appearance much like that of connective-tissue fibers. But the cells have not become connective-tissue cells; they are only the shrunken and wrinkled, pathologically changed, fat cells. All the fat does not disappear from all the cells, even in extreme emaciation, and those cells devoid of fat still contain a yellowish fluid whose color is derived from the discharged fat. That they retain the coloring matter of the fat while they discharge the fat itself is entirely at variance with the supposition that they become connective-tissue cells.

Finally, if nutrition is resumed in a previously starved animal, all the fat cells again fill with fat without going through the process of development characteristic of their original development, and which would have been necessary had they assumed a connective-tissue-cell form.

We have the following, therefore, in support of the special cell origin and glandular nature of the fat cell:

1. Its occurrence in the lower vertebrates in special organs, composed of gland-like cells, developed from special centers.

2. Its first appearance in fœtal higher vertebrates in gland-like masses, developed from special centers, homologous with the special fat organs of the lower vertebrates.

3. The continuance of adipose tissue in the lower vertebrates as fat glands, never changing into other tissue, and as distinct in structure and function as other ductless gland tissue.

4. The limits placed upon the place of occurrence of adipose tissue in all animals, and its non-appearance in certain regions where connective tissue is always present.

5. Its specialized metabolic functions, and the gland-like development and arrangement of its blood supply, all of which place it in an entirely different histological and physiological class from that of the supporting functioned connective tissues.

Bibliography.—The bibliography is extensive, and up to 1887 is collected in a paper by Gage: Fat Cells and Connective-tissue Corpuscles of Necturus (Menobranchus), published in the *Proceedings of the American Society of Microscopists*, vol. iv, for that year. Of later date, Foster's *Physiology*, 5th edition, part ii, gives a most excellent account of the physiology of fat tissue; and Schäfer, in Quain's *Anatomy*, tenth edition, vol. i, part ii, gives a full account of the origin of the fat cell according to the connective-tissue cell theory.

TENOTOMY FOR CONTRACTED TENDONS FOLLOWING INFANTILE PARALYSIS.

A REPORT OF A CASE.

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SURGEON TO THE CITY HOSPITAL.

Vivian M. C., a boy thirteen years of age, was born in London, and while an infant he was afflicted with infantile paralysis. The mother consulted several surgeons, and finally Mr. Adams, in London. Mr. Adams had made for him his modification of Scarpa's shoe. He had been subjected to various methods of treatment from the time he was a child. The parent coming to this country, he was referred by Mr. Adams to a distinguished orthopædic surgeon of this city, who treated him for a year with massage. At the end of seven months a photograph was taken (see Fig. 1) which, as the boy expresses it, shows "the best possible position in which he could place his feet." The dotted lines show that the feet could not be placed at right angles. The mother then consulted a well-known conservative orthopædist of this city, who advised her to do nothing, but to build up his physical condition. She then consulted another orthopædist of this city, who informed her that by interrupted traction with his machine for one or two years he thought he could cure the deformity. The mother then consulted me on September 23d, and I informed her that I believed tenotomy of the tendo Achillis should be performed. The feet could not be placed at right angles with force at that time, and he was suffering from partial paralysis which had resulted in a shortening of the tendo Achillis which drew up the heel, producing a mild form of equinus. As he walked, the tendency was to throw the feet inward, and before many months he would have developed a severe double talipes varo-equinus. When he came to this country there was placed a very severe injunction on the mother to "allow no American surgeon to operate on his tendons, else his feet would surely be ruined."

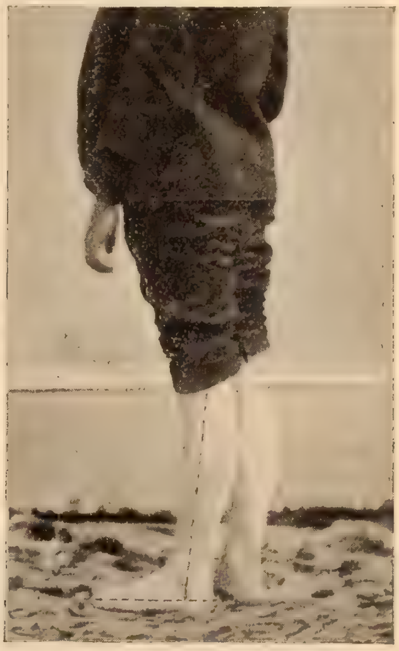
Fig. 1.

On September 25, 1892, assisted by Dr. Plimpton and Dr. Goodwin, and in the presence of Dr. A. J. Steele, of St. Louis, I performed the operation, and immediately placed the feet in a supercorrected position. They were kept in this position for six weeks, and were again put in plaster for two or three weeks more. He was allowed to walk with plaster of Paris until braces were adjusted. The tendons were lengthened two inches and a half, and on examination I think it will be difficult to determine where the new tendons begin and the old end.

In performing tenotomy on these tendons I inserted the tenotome, split the tendon an inch and a half subcutaneously, and then cut out on either side of the tendon above and below, allowing it to slip by and lap. This operation I had resorted to a great many times before, and, so far as I know, am the first to perform it subcutaneously. The case was presented at the Academy of Medicine last fall soon after the operation. At the last Academy meeting, in October, 1893, I again presented him. He wore his braces only about three months from the time of the operation; then they were found no longer necessary. On presenting him before the Academy of Medicine, it was found that he walked almost perfectly, that there was no tendency to relapse, and that he could stand upon his toes, as seen in Fig. 2, and could place both feet beyond a right angle, as seen in Fig. 3.

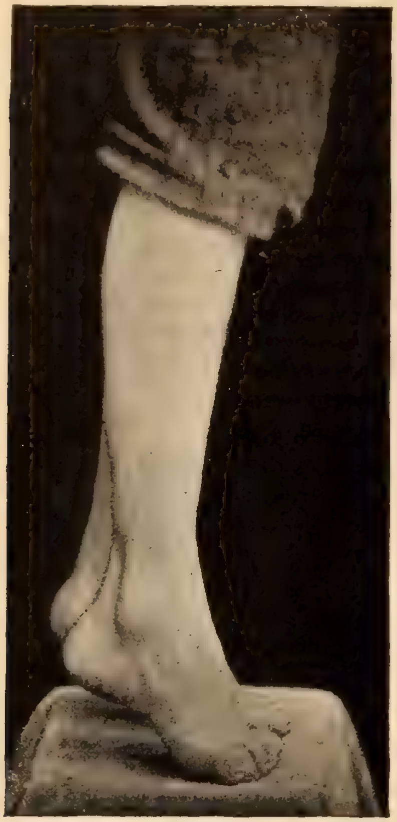

Fig. 2.

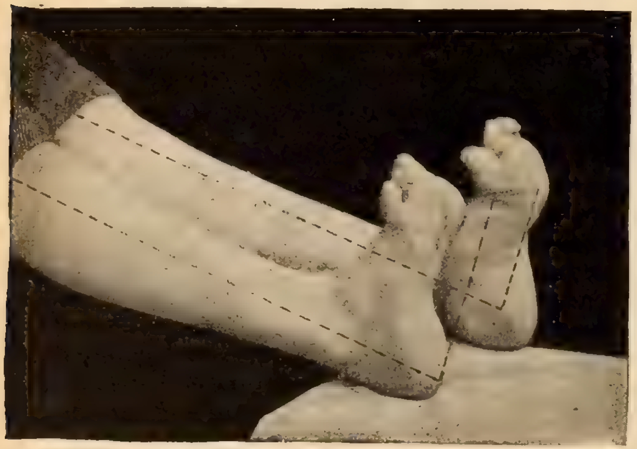

Fig. 3.

My conclusions are that in these cases of contracted tendons following infantile paralysis much better and more rapid results can be attained by subcutaneous tenotomy than by all the bracing known to the orthopædic world. After these tendons have been lengthened, if then braces are required, the orthopædist can adjust them, and well he should. The constant pulling and hauling of such tendons with traction machines or braces is to my mind a most unscientific procedure, and should not be tolerated by any patient.

SOME CRITICAL AND DESULTORY REMARKS ON RECENT LARYNGOLOGICAL AND RHINOLOGICAL LITERATURE.

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Professor B. Fraenkel has recently launched a new laryngological and rhinological journal on the already overcrowded sea of special medical literature.

If succeeding numbers equal the first two in the merit of their contents and the pre-eminence of their contributors, the *Archiv für Laryngologie und Rhinologie*, if it finds no "long-felt want to fill," will at least earn for itself a foremost place among the numerous journals especially devoted to the diseases of the nose and throat.

The opening contribution to the first number, continued in the second, is from the pen of the distinguished editor himself, detailing the results of his Studies in the Microscopic Anatomy of the Larynx. With the help of a series of fine photographs, he seems to have conclusively proved the presence of glands in the immediate vicinity of the vocal cord, an assertion which he had previously made in communications published elsewhere.

He includes in the term vocal cord all the tissue which projects beyond a plane even with the tracheal wall and the lateral ventricular wall. It would be fortunate if every writer would specify exactly what he means by vocal cord, or, better still, if some exact limitation to the term were generally agreed upon.

Fraenkel found the opening of one of the glands 1·8 millimetre from the edge of the cord, but he quotes Coyne as having found them nearer.

"One gets the impression," Fraenkel says, "on examining the anatomical preparations, that muscular contraction would press out the glandular secretions."

In some of his former papers Fraenkel has stated that papillæ are found in the normal laryngeal mucous membrane in places.

As this has a direct bearing upon the accuracy of the clinical observation, frequently questioned, of mucous patches in the larynx of syphilitics, his present explanation, if rightly understood, is somewhat disappointing. He says that below the free edge of the vocal cords there are folds of squamous epithelium running parallel with them. These folds (*Leisten*) he calls papillæ, because on transverse section (vertical as to the body) they have that appearance, but they are not seen on horizontal section (parallel with the cords).

Now, a true papilla is, of course, seen in sections made in any plane, and, from the perusal of Fraenkel's work, it is impossible to understand exactly whether he has found the true papillæ in the larynx or not. Pathologically, the folds are produced from the same cause as papillomata—irritation, the products of chronic inflammation.

Unfortunately, Hopman and his followers have produced similar confusion in nasal pathology.

The lymph nodes shown by Fraenkel suggest the probability of the occurrence of lymphoid hypertrophy in the larynx. Very few cases have been reported. One was reported by me in the *Journal of the American Medical Association*, September 26, 1891, when the remark was made that, in all probability, the apparent rarity was really due to insufficient microscopic discrimination, since clinically they may closely resemble papillomata.

He emphasizes the statement that the appendix of the laryngeal ventricle is really a separate organ, communicating with the latter by a comparatively narrow fissure. He criticises the method of demonstration adopted by Gerlach, who filled out the ventricles and their annexa with absorbent cotton saturated with warm paraffin, and, allowing it to harden, from the mold thus obtained described their normal shape. Fraenkel justly says this only shows the extent and direction to which the cavities may be stretched. He, however, maintains, with less show of reason, that serial sections represent the normal condition better. A collapsed laryngeal ventricle, post mortem, probably shows as little of the true *intra-vitam* condition as does the collapsed lung. Neither the artificial dilatation nor the post-mortem collapse can be reasonably regarded as representing the natural condition. It is more reasonable to suppose that a form midway between them is the one more nearly approached to the one assumed during function. The arrangement of the muscular fibers would suggest dilatation during the production of loud vocal sounds.

From these considerations, therefore, and from certain anatomical conditions of the larynx in lower animals, it seems to me we can not be so sure as Fraenkel appears to be that the appendix ventriculi laryngis has nothing to do with the vocal sounds, and that "the only function in accordance with the construction of the appendix is that ascribed to it by Morgagni—viz., to secrete a fluid which is intended to keep the vocal cords lubricated." The results obtained in a case of total extirpation of the larynx, and reported by Wolf in the *Berliner klinische Wochenschrift*, No. 42, 1893, seem to indicate, however, that vocal sound production, at least Helmholtz's "ground-tone" part of it, is much more simple than usually supposed. By means of a slight modification of his artificial larynx, Wolf obtained from the patient a voice hardly noticeable in its variation from the former normal condition. Of course, an artificial larynx does not allow for the changes in shape and position supposed to be so necessary for anything like normal sound production.

Fraenkel's photographs of the sections of the larynx require considerable study before their meaning is apparent; but with his very lucid explanations they are very instructive. The abundance of the mucous glands is very striking, for in places they are as numerous as they are in the nose.

He again calls attention to the patches of pavement epithelium found here and there in the larynx elsewhere than on the cords. He mentions the digitations of these flat cells, reaching into the stroma at the posterior commissure, and the islands of epithelium in the sections due to the transverse divisions of these digitations.

These anatomical relations are well known to histologists, but it is well to bear them in mind in clinical work, in order to appreciate the elements of uncertainty that may enter into the diagnosis of doubtful neoplasms by the microscope.

The question of the transformation of benign into malignant growths will never be settled by citation of cases. The further evolution of biological and pathological laws alone can do it. As far, however, as clinical evidence, supported by histological examination, can go, E. Fink, in Fraenkel's *Archiv*, No. 2, has narrated a case in which there was an apparent transformation of a benign growth of the antrum of Highmore into a malignant tumor. Œdematous polypi had existed for years in the nose and in the antrum. They were examined microscopically and found to be benign. Suddenly evidences of malignancy appeared in the antrum. The man shortly died of a cancer having its origin there.

While we may admit the possibility of the growth having begun in the polypi, two objections on the spur of the moment may be advanced:

1. Œdematous polypi of the nose do not fall under the usual definition of a tumor as "a circumscribed new formation of tissue, not due to inflammation, and not fulfilling any physiological purpose, but existing as a more or less independent structure." There is abundant authority for the assertion that the ordinary nasal polypus *is* due to inflammation, and does *not* "exist as a more or less independent structure." It is not usually a true myxoma.

2. The writer has only shown that a malignant growth occurred in the immediate vicinity of a pre existing benign one, not that it had its *origin* in the benign growth itself.

The inference in this case, as in many others, is very strong, but, in the face of pathological laws as usually accepted at present, it is *proof*, not inference, we want.

In the first number of the *Archiv* Sokolowski describes an interesting case under the title of A Contribution to the Question of the Possibility of the Transformation of a Benign Laryngeal Tumor into a Malignant.

As is well known, Semon, of London, shortly after the tragic death of the Emperor Frederick, collected the data of a large number of cases of laryngeal neoplasms. The result of a very exhaustive consideration of these cases was that such a transformation is of the greatest rarity. It seemed probable in five cases out of 8,216 that such a transformation had taken place. The evidence of such a change in nearly all the cases reported is unsatisfactory. Still, in an inexact science, where all things are possible, the occurrence of such a metamorphosis can not be denied as a possibility, however much we may be disposed to disbelieve it in any given case.

One fact, however, stands pre-eminent, and that is the unreliability of differential diagnosis from either purely clinical or purely histological data. This is well exemplified in Sokolowski's case. A polyp was removed from the left vocal cord under the impression that it was benign; it was preserved, but not examined histologically. Four years later there was a recurrence at the former site. This was destroyed with the cautery, although it was then supposed to be malignant. Eight months later the patient was operated on by another laryngologist, who, in view of the history and the appearance of the growth, clinically and histologically thought that it was a benign adenoma. Then Sokolowski examined the piece he had taken out five years previously and concluded that it was an adeno-carcinoma. This was afterward proved to be the case, the growth again recurring in a form clinically plainly malignant.

Curiously enough, Krieg, in the second number of the *Archiv*, reports another case of glandular carcinoma lasting for six years and a half, operated on three times by endolaryngeal methods, the patient being still alive and well. These cases also tend to strengthen the position taken and still held by Fraenkel as to the preference of endolaryngeal over extralaryngeal methods in certain cases of malignant disease.

As time goes on those of us who have reproached ourselves with unfavorable results in the surgery of the accessory cavities of the nose may take a little courage at the confessions of more recent writers on the subject of intranasal suppuration.

Many papers have been published in the last two or three years detailing very satisfactory results in operations for empyema of the antrum and of the other accessory sinuses.

The large number of cases reported by single observers, the remarkable proportion of cures, and the short duration of treatment have prevented many from considering their own clinical experiences of value, limited as they are in numbers and discouraging in results. Grünwald's recent monograph, *Die Lehre von der Naseneiterung*, and Jansen's Zur Eröffnung der Nebenhöhle der Nase, etc., in Fraenkel's *Archiv*, No. 2, except in the number of cases, conform more to my own experience. To sum it all up—for this is no place for the complete review these excellent papers deserve—the exact diagnosis is often extremely difficult; in old cases extensive openings of the sinuses, curetting and packing, and long after-treatment, are usually necessary; the prognosis is doubtful; the length of treatment discouraging to patient and operator.

Zwaardemaker, in the *Archiv* No. 2, speaks of the value of the film made by the breath in expiration on a cold mirror held beneath the nostrils in the diagnosis of nasal obstruction—the stenosed nostril showing a smaller area. This is a very interesting suggestion. There is nothing more unreliable and puzzling than a patient's statement in regard to respiration through his nose. It is frequently very difficult even on inspection to estimate the actual size of the breathway, for a tortuous passage does not necessarily mean a stenosed one. There is a fallacy, however, in the author's method, which in some cases may be a very great one. The chief pathogenic importance of nasal obstruction is felt in inspiration, not expiration. The action of the alæ nasi and of the soft palate, and doubtless that of the intranasal structures themselves, bear very different relations to impeding the air current in inspiration and in expiration.

Nevertheless, this attractive and, as far as I know, new method of estimating a frequently puzzling condition may be found by more extended observation to possess considerable diagnostic value.

To me about the most interesting of all the papers in the two numbers of the *Archiv für Laryngol., etc.*, is the one by Franke on the Experimental Investigation concerning Air Pressure, Air Currents, and Air Diffusion in the Nose and its Accessory Cavities. The works of Donders, Bloch, Paulsen, and others are unsatisfactory, because in many particulars they did not conform to expectations derived from our knowledge of the laws of physics and our acquaintance with intranasal anatomy, while deductions which would inevitably follow some of their statements are not borne out in the clinical experience of morbid processes.

It appears to me that Franke's work is much more accurate in its methods and more reasonable in its results. Space does not allow an adequate description of this valuable paper, but the three devices he experimented with may be described as follows:

1. *Nose Tubes.*—The nasal chambers were represented by two glass tubes ten centimetres long and fifteen millimetres in caliber. A glass bulb three centimeters in diameter, which was fixed to the side of one of the tubes, communicated with it by an opening of five millimetres and represented the maxillary sinus and its orifice. To the side of the other glass tube, as well as to the glass bulb, supplementary tubes were adjusted for the use of a manometer.

If now these glass tubes are fitted air-tight into the nostrils, that end of the tube will represent the artificial choana, while the free end will represent the artificial nostrils.

"By the following modifications, we may produce partial or total nasal stenosis. I had made eight olive-shaped, hard rubber balls, of which four were eight millimetres and four were three millimetres in diameter. By placing these balls here and there in the lumina of the glass tubes, we may observe the air-pressure phenomena in the nasal and maxillary cavities as they occur in different cases of well-marked nasal stenosis."

2. *Nose Model.*—"In order to establish the influence which the form of the nasal cavities has upon the variations of the air pressure, and in order to measure the air pressure in the accessory cavities, I had prepared, as a nose model, a small flat box which had about the shape and size of the nasal cavities, and had adjoining compartments to represent the frontal and sphenoidal sinuses; the external nasal wall and the nasal sæptum were formed by plates of glass. The frontal and sphenoidal sinuses are in communication with the nasal chambers through openings. One of the glass plates was also pierced and an entrance made to the maxillary sinus, which was represented by gluing on half a

medicine glass. Openings in the sides of the different cavities allowed a communication with a manometer."

3. "For the necessary investigation of the natural respiratory cavities I prepared a fresh head in the following manner.

"The head, which was normal and from a female subject of twenty-five years, was sawed through exactly in the median plane; the remains of the sæptum were removed, so that the nasal, frontal, and sphenoid cavities lay free. The maxillary sinuses also were exposed by a sagittal cut 4·5 centimetres from the median plane. After I had assured myself of the permeability of the openings leading to the accessory cavities, the mucous membrane was stained black with ink, and on the cut surfaces two glass plates were fastened air-tight." (He used tobacco smoke to show the direction and shape of the air currents.) "The cavities were bored into from without, for the use of a manometer."

By these three ingenious arrangements he obtained uniform results which are very interesting and apparently reliable. From the results thus experimentally obtained he drew various conclusions, some of which are as follows:

"The air pressure in the accessory cavities is the same as that of the cavity into which they open. . . .

"The amount of air pressure in the nose is determined—

"1. By the actual size of all the nasal cavities.

"2. By the relative size—*i. e.*, by the difference in size between the choana and the anterior openings (or any other *narrowest passage*).

"3. By the situation of the narrowest place in the nasal passages.

"4. By the force and rapidity of the respiratory movements. . . .

"The air pressure in the normal nose and accessory cavities in normal breathing is at most two to three millimetres of water. This amount is, of course, insignificant. . . .

"Difference in air pressure stands in no causative relation to the variation in size and shape of the nasal and accessory cavities. . . .

"It is a mistake from a physiological standpoint to distinguish between a respiratory and an olfactory region, for the olfactory region is the true respiratory region. The nose fulfills its function as the organ of smell in virtue of the fact that the chief air current in inspiration passes over the distribution of the olfactory nerve.

"The terrace-like arrangement of the turbinated bones, hanging one over the other, and the peculiar anatomical structure of the nose, which permits of eddying currents, and the eddies caused by the meeting of the currents of inspiration, also serve to bring the air thoroughly and extensively in contact with the olfactory nerve distribution. . . .

"The change of air takes place more quickly in the accessory cavities; the larger the communicating openings are, the more propitiously the latter lie to the passing air current, and the stronger the respiration is. . . .

"The accessory cavities can serve neither for moistening nor warming the air, nor, as Braune and Clasen would have it, to increase the sharpness of smell.

"The nasal cavities have for their different functions appropriate arrangements, but the accessory cavities have no function at all. Since these accessory cavities are without function and have nothing to do with respiration, their size and development are as independent of the different respiratory processes as is the size of the nasal cavities of the amount of air pressure."

Franke does not seem to have in mind any modification of vocal sound produced by the accessory cavities, nor the lightness and strength they add to the bones of the head, but refers only to the more prominent of the intranasal functions.

The case, narrated by Dr. Grayson in the *Medical News* of November 4, 1893, p. 520, of spontaneous healing of an ulcerative tuberculous laryngitis attracts attention because of the bearing it has upon remedial measures in this terrible disease. One can not but be impressed, on reading Heryng's last paper in the *Journal of Laryngology and Rhinology* (Nos. 8 and 9 of 1893), as well as his other previous communications, with the sincerity and trustworthiness of his statements of fact. He has demonstrated, without a doubt, the *possibility* of a cure of laryngeal phthisis, and for the demonstration he deserves and will receive credit from laryngologists the world over. By curetting the ulcerations and rubbing in lactic acid, he has cured a very few patients (sixteen cases thus far reported) who have been free from the laryngeal disease for periods of five to two years up to date. But Dr. Heryng has seen eight hundred and thirty-eight cases and treated surgically two hundred and thirty-nine. Presumably, then, not one third of the cases were amenable to treatment. Of the cases treated, about one in eighteen was cured; and of all the cases seen, one in fifty-two. This being the most favorable of all trustworthy reports, after making proper allowance for possible errors due to the enthusiasm of the author, for possible errors of diagnosis, or of observation, we are unavoidably a little discouraged at the showing. Dr. Heryng himself admits the occurrence of spontaneous healing. He instances a very convincing case. Dr. Grayson's case, referred to above, is not so convincing. Syphilis as a concomitant factor was not entirely ruled out. Spontaneous cure does not in all probability result once in eighteen times. Whether it does not occur once in fifty times is extremely doubtful. That is the discouraging aspect of the question from a clinical standpoint. Theoretically, does it seem possible that an open wound in the larynx, constantly bathed in sputum full of bacilli from the lungs—even supposing, for argument's sake, that the diseased area has been eradicated by curette and acid—does it seem probable that such an open wound would often heal without reinfection?

Operations on the joints are not analogous cases at all. They could only be made analogous by using dressings of tuberculous sputum for the wound.

We can not fail to admire Dr. Heryng's courage of conviction, but we can not share it.

C. Stoerk, in the *Archiv* No. 2, lets off a blast of indignation and puts some common sense into forcible words on the subject of the creasote therapy of tuberculosis.

"I have no intention," he says, "of provoking a controversy, but I feel myself forced to the expression of my opinion of creasote medication by the enormous number of constantly repeated cases which I see year in and year out in my outdoor clinic, as well as in my private practice. Half-dying people lay before us their crumpled prescriptions, with their solitary constituent of creasote, and still creasote in the most varied forms, and from their history it is learned that since they have used this medication they have entirely lost their appetite and, the taking of nourishment sunk to a minimum, having lost frightfully in weight, reduced to a skeleton, plagued every hour of the day with cough and night sweats, they have dragged out a miserable existence. 'I can not get the disgusting creasote taste out of my mouth' is their typical complaint. The drug, however, they continue to take, because they have heard of so many who have been cured of tuberculosis by creasote; in their delirium of hope the unfortunates cling to a straw, and their faith in the specific is unconquerable." Perhaps his warmth is a little unscientific, but those whose cardiac plexus is in a healthy state will overlook the non-judicial tone of his remarks, especially those who, like myself, in chasing the *ignis fatuus* of tuberculosis therapy, once wrote many such prescriptions and have seen many more and their results.

The statements of Seiler, in the last edition of his work on the throat, under the head of Uterine Reflex Laryngitis, must certainly have produced considerable skeptical astonishment in many laryngologists.

In the second number of the new Italian journal *Archivio italiano di otologia, rinologia e laringologia*, Fereri has an article on Laryngeal Neurosis after Certain Gynæcological Operations.

He insists on the clinical association of hysterical aphonia and certain isolated paralyses of the laryngeal muscles with various malpositions of the uterus and diseases of the uterus and the annexa.

The ætiological connection is signalized in these cases by the cessation of the laryngeal symptoms on the correction of the genital troubles. Both Seiler's and Fereri's observations are somewhat indefinitely stated. As the literature of the subject is so scanty, their statements, if not unreservedly accepted, are worthy of note, though we confess we are somewhat reluctant to seriously attempt to diagnosticate uterine displacements by means of the laryngoscope, the possibility of which is asserted by Seiler.

There have recently been published some interesting papers on diseases of the nasal sæptum, a structure which has been credited with considerable immunity from morbid processes.

In the *Berliner klinische Wochenschrift*, No. 46, 1893, we find a simultaneous report by two different observers of two cases of Idiopathic Acute Perichondritis of the Nasal Sæptum. Dr. Schröder and Dr. Lublinski, apparently independently of one another, each report a case. From the statements made in these two articles there seem to have been only seven or eight cases, inclusive of their own, reported.

This is a rather remarkable showing, but it is still more noteworthy how extremely few cases of perichondritis from trauma are seen or reported when we consider what a prominent feature the triangular cartilage supports.

By perichondritis, however, we usually mean an inflammation leading to necrosis of the underlying cartilage. When we consider what a vascular supply the cartilage has from both sides, probably richer than any other cartilage in the body, the rarity of necrosis is comprehensible even in its exposed condition. It is probable that perichondritis and *chondritis* is the process to which we must ascribe many of the deviations, spurs, and thickenings of the nasal sæptum; and these inflammations may be caused not only by trauma, but by extension from the mucous membrane in ordinary rhinitis.

Perforations of the sæptum due to syphilis and to the finger nail are common enough, but they belong to another category.

Chiari's paper in the *Archiv f. Laryng.*, No. 2, on Tuberculoma of the Nasal Mucous Membrane adds nothing to the work done some time ago by Hajek, except the report of six new cases.

But Herzog, in the *American Journal of the Medical Sciences* for December, 1893, writes a very readable paper on Tuberculosis of the Nasal Membrane. In remarks preliminary to the report of cases he speaks of Hildebrandt's experiments, remarking that "the micro-organisms suspended in the air we breathe do not normally get into the deeper parts of the respiratory tract, but are kept back by the nose and naso-pharynx. It is evident that if these parts have the function of keeping back from the lungs pathogenic micro-organisms suspended in the air they must necessarily be endowed with such properties as to make innocuous or remove such micro-organisms."

In this connection I can not refrain from quoting from a paper of my own, written four or five years ago, which detailed various experiments in nasal bacteriology and was published in this *Journal*:

"It is yet an unsolved mystery how the *Bacillus tuberculosis* reaches the most frequently chosen seat of its selective action in the apices of the lungs, and how the pneumococcus usually reaches the lower lobes before pneumonia occurs. To a bacteriologist it is almost inconceivable how a microbe, entering the anterior nasal meatus with the tidal air, should go through the tortuous moist passage of the nose, past the broad surface of the palate, and the post-pharyngeal wall, into the larynx, between the false and true cords, down the long tubes of the trachea and bronchi, and finally find a lodging place on the walls of the bronchioles and air cells. The chances of its being arrested before it reaches them seem almost infinite, especially since the tidal air must stop at a comparatively high point in the respiratory channel and flow upward again on expiration." It was found—perhaps from an insufficient number of experiments—that the nasal chambers in one case were "capable of filtering out about three fourths to four fifths of the bacterial contents of the air passing at the rate of one litre a minute, but we have about nine litres a minute passing through the nasal chambers." From this I drew the conclusion, tentatively, in view of the small number of experiments, that the nose does not in itself act as a perfectly efficient filter—probably far from it.

The recent remarkable statements of Wurz and Lermoyez in the *Annales des maladies de l'oreille, etc.*, August, 1893, apparently grounded on irreproachable experiments, are incomprehensible if we can give any credence to former work in nasal bacteriology. They maintain not only that the nasal mucus is sterile, but that it is a strong germicide. It annihilates the anthrax spores in broth when mixed with it. It is evident that somebody has made a mistake.

To return to Herzog's paper. He reports ten new cases of nasal tuberculosis of his own, some of which might more properly be termed lupus, while others were associated with lung tuberculosis. He tabulates eighty cases of tuberculosis of the nose hitherto reported. It may perhaps be well to remark here that tuberculosis of the nose in a patient dying with pulmonary or laryngeal phthisis is an incident that is easily, nay, is pretty sure to be, overlooked. It would inevitably be found, if all cases of pulmonary phthisis were examined rhinoscopically, that nasal tuberculosis coexists in many.

That Herzog has only been able to collect twenty cases of *primary* nasal tuberculosis is, however, instructive. Some cases have been reported, probably since Herzog wrote his paper, by Farlow (*New York Medical Journal*, November 4, 1893) and Chiari (*loc. cit.*).

The situation of the disease in the eighty cases tabulated, where it was definitely mentioned, was upon the cartilaginous sæptum in nearly all the cases—in some including the floor of the nose and the anterior end of the inferior turbinated. This choice of situation might indicate contamination from the finger nail, but not necessarily, since more dust, presumably more germs, lodge in the front of the nose.

Ulcers, too, may frequently exist far back and escape notice.

Dr. Herzog has, so far as I know, given us in this paper the best *résumé* of the subject of nasal tuberculosis in the English language, and perhaps of any yet published. He summarizes as follows:

"1. Tuberculosis of the nasal mucous membrane, compared with tuberculosis of other parts of the respiratory tract, preferably with this affection of the lungs and larynx, is a rare disease; it is, however, not as rare as formerly supposed.

"2. It is generally a secondary affection, but also occurs primarily, as proved by unmistakable clinical evidence and by post-mortem facts.

"3. Where it occurs it is frequently secondary to pulmonary and laryngeal phthisis.

"4. It occurs in the form of ulcerations, tumors, and a combination of both. The tumor is generally found in the primary cases, while the ulceration is the prominent factor in advanced cases of phthisis.

"5. It may occur at any age (except probably in the very earliest months of life), preferably at the ages between ten and forty years.

"6. It does not show any predilection as to sex.

"7. Its seat is preferably the sæptum cartilagineum.

"8. Its course is very chronic, and relapses after surgical interference are the rule.

"9. It is, *per se*, not dangerous to life, but may eventually lead to fatal complications, such as basilar meningitis and possibly miliary tuberculosis.

"10. One of its most important direct complications by continuity is that with tuberculosis of the naso-lacrymal duct and the conjunctiva.

"11. It may also be complicated with tuberculosis of the pharynx, palate, tongue, external integument, lupus of the nose, face, tuberculosis of the cervical glands, empyema of the antrum of Highmore, etc.

"12. Lupus of the face or of the nasal mucous membrane may, in its further development, lead to tuberculosis of the nasal mucous membrane" [*sic*].

THE EFFECT UPON THE LUNGS OF EFFUSION INTO THE PLEURAL CAVITY.*

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In looking over the text-books on practice of medicine and diagnosis one is struck with the unanimity of the statements in regard to the effects that effusions into the pleural cavity have upon the contained lung, the heart, the intercostal spaces, and diaphragm and abdominal organs. The general idea conveyed is that the exudation gravitates to the most dependent portions of the pleural sac, and immediately exerts a positive pressure upon the diaphragm and thoracic wall, and forces the lower portion of the lung upward in direct proportion to the extent of the effusion. It is also taught in most of the books that the upper surface of the fluid, when the patient is standing or sitting erect, is in a horizontal plane, and, when the position is changed, there is a corresponding change in the level of the fluid; in other words, it acts as fluid in an open vessel, always seeking a hydrostatic level. This explanation, while very simple, entirely ignores the physiological laws of respiration and takes no cognizance of the forces that are involved. What are these forces and their laws? As soon as the newborn child takes its first deep inspirations the lung is in a condition of distention the degree of which is different in different portions of the lung. The two surfaces of the pleura are in close apposition throughout their entire surface, and the lung is constantly striving to regain the condition of equilibrium. This it is prevented from doing on account of the resistance offered by the bony thorax and its muscles and the action of the diaphragm, although it is able to curve the diaphragm upward, depress the ribs, and draw in the intercostal muscles. This suction power of the lungs is the so-called *negative pressure* of the physiologist. If a small incision is made through the intercostal muscles into the pleural sac, so that there is *no obstruction* to the entrance of air, then the elasticity of the lung quickly causes it to resume its normal form, according to the resilience of the tissues, and the lung is said to have collapsed, the atmospheric pressure being equal on both sides of the alveolar walls, the ribs, intercostal muscles, and diaphragm no longer opposing. Air entirely surrounds the lung and separates the two surfaces of the pleura.

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* Read before the Society of the Alumni of Bellevue Hospital, January 3, 1894.

When fluid is poured into the pleural cavity another factor comes into play, altering the condition of the lung.

Clinicians have repeatedly called attention to cases of pleurisy with effusion in which the line of flatness was not straight and did not readily change with the altered posture of the patient. These departures from the assumed typical line have been explained by many plausible theories.

Damorseau first discovered that the line of flatness was always a curved one when the lung on the affected side retained its normal elasticity. Ellis later emphasized the fact and accurately described the curve, so that to-day it is known as the curved line of Ellis, or the letter-S line.

Garland (*Pneumonodynamics*), in a series of experiments on dogs, by injections of cocoa butter into the pleural cavities, demonstrated, by the molds thus obtained, that this curved line was constant when the lung was normal and was formed by the action of the lung on the fluid, and not, as was generally supposed, by the fluid molding the lung. He found that "the fluid collects first in the complemental spaces. Thence it extends in a narrow band upward and forward between the lower border of the lung and costal attachment of the diaphragm. At the same time it spreads out in a thin sheet over the diaphragm. The fluid continued to proceed in this manner until it began to bag down the diaphragm, to obliterate the intercostal depressions, and to rise behind the lung in the vertebral groove, and, lastly, it appears between the lungs and the lateral chest wall."

These experiments were the first that accurately determined the line of the curve. They also proved our power to accurately map out the level of the fluid by percussion, as the line, so determined, was found on dissection to correspond in all points to the level of the cast.

The experiments on dogs demonstrated that the upper surface of the fluid was curved, but did not explain the cause.

Garland used a modification of the well-known laboratory apparatus to illustrate the action of the lung on the fluid in the pleural sac and the forces involved.

A rubber balloon, with glass tube attached, is put in a bell jar with an opening for a rubber cork at the top and in the side. The tube attached to the balloon is carried through the cork at the top and left open; another rubber cork with glass tube attached closes the opening in the side of the jar. The bottom of the bell jar is closed with a rubber diaphragm. The air in the bell jar is exhausted through the opening in the side. When this is done, the rubber balloon is in contact with the inner side of the jar at all points, the rubber diaphragm arching up and encircling the lower part of the balloon.

If a rubber tube, attached to the glass tube in the side of the jar, is immersed in water and opened, the retractile power of the balloon is sufficient to draw the water into the jar, when a small amount of water is allowed to enter. The balloon holds the water wrapped about its lower border, so to speak, by virtue of its negative pressure. "The column of water, instead of supporting the balloon, is actually suspended by the retractile force of the latter, and the column of water, being in suspension, must exert a negative pressure on the balloon in proportion to its weight." The balloon retains its convex shape. The rubber diaphragm is arched up, but to a less extent. The surface of the water is biconcave, and it is confined to the lower part of the jar. The balloon assumes its original shape when air is let into the jar, because air does not exert a negative pressure; but when water is used, the balloon retracts until its negative pressure or retractile power is equalized by the weight of the column of water it suspends. When this point is reached the diaphragm is no longer arched upward; it has resumed a straight line on account of the resilience of the rubber. If more water is forced into the jar, then the weight, being in excess of the retractile or suspending power of the balloon, will begin to exert a positive pressure on the diaphragm, bagging it down, while at the same time it has a negative pressure on the balloon, causing it to distend as the diaphragm is displaced downward. All excess of water introduced will so continue to act on the diaphragm and balloon until that point is reached beyond which the rubber diaphragm can not be carried down, at which it becomes a fixed point of support for the column of water. If more water is now forced into the jar the balloon will again begin to contract, not because the water is compressing it, but because the negative pressure of water is, to a certain extent, removed by the support of the diaphragm. The balloon flees before the advancing level of the fluid, but still exerting, with decreasing intensity, a negative pressure on the fluid, whose upper surface still retains a convex form. The balloon will so continue to act until its elasticity reaches the zero point and the balloon is in its normal condition—*i. e.*, until it reaches the size it originally was before it was inflated. The fluid can not act on the balloon until the elasticity of the latter is exhausted. Beyond this point all the water introduced exerts a positive or compressing effect on the balloon until at last it is airless.

Instead of the distended balloon in the glass jar, let us consider the distended lung in the airtight thorax. The amount of distention of the normal lung during life is not as yet accurately determined. Foster, by fitting a manometer in the trachea of a cadaver and then opening the thorax, found the pressure to be about seven millimetres of mercury. This is far below that of life. In the balloon the degree of distention was the same throughout the lower segment, and consequently the level of the fluid was uniformly curved; but all portions of the lung are not equally distended, the distention being greatest in the lower segment, in the axillary region, less in the mammary, and least behind.

In pleurisy with effusion the fluid, if no other force acted upon it, would gravitate to the most dependent portion of the pleura and seek a hydrostatic level. But as the lungs contract with most force in the radii of its greatest distention, it is able to overcome or modify gravity and draw the fluid to that part, as was shown in the distribution of fluid in Garland's experiments, and the flatness on percussion will appear first in the axillary line. Portions of the lung will continue to draw the fluid until the distention is equal throughout; consequently the level of the fluid will rise higher at those points where the distention of the lung was the greatest.

As was explained in the experiment with the balloon and glass jar, the diaphragm is arched upward by the retractile power of the balloon; so in the thorax the lung acts upon the diaphragm to draw it up and upon the ribs to depress them, and diaphragm and thoracic wall are constantly trying to regain their normal or zero point of tension. As the weight of the fluid exerts a negative pressure on the lung, it relieves the diaphragm and thoracic wall of that amount of traction by the lung, and the one descends and the other expands, giving increased size to the affected side of the chest. The fluid can exert no positive pressure on the diaphragm or ribs until the weight of fluid exceeds the retractile or suspending power of the lungs; when it exceeds the amount, then the excess of weight bags down the diaphragm and produces a lateral pressure on the chest wall, but at the same time exerts a negative pressure on the lung, causing it to expand again. When the weight of the fluid has carried down the diaphragm and bulged the chest wall to the utmost, then the negative pressure of the fluid ceases to cause distention of the lung. As the amount of fluid increases, the lung retracts before the fluid, again exerting a suspending power, which decreases until the zero point of retraction is reached—that is, until it has reached the size it has when air is allowed to enter the pleural cavity freely. Rokitansky says the normal lung can contract to an eighth of the size it has when distended in the thorax. Until the zero point of contraction is reached, the fluid exerts no compression on the lung. "It merely flees before the fluid." All excess of fluid beyond this point begins to exert a positive compression of the lung.

Thus far the reaction of the healthy lung only has been considered. If the lung is bound down by adhesions or its resilience is diminished by pathological conditions—as emphysema, tubercular infiltration, etc.—then the fluid would not assume as marked a curve line; it would earlier exert a positive pressure on the diaphragm and chest wall and a compressing effect on the lung. This line has a positive diagnostic value, as its curve depends entirely on the elasticity of the lung. Although foreign to the subject, the effect of the fluid on the lung sheds some light on the relation that the occurrence of an effusion into the pleural cavity has upon tubercular disease in the lower lobe of the lung on that side, often changing an acute process into a chronic one, or even arresting it.

The fluid acts somewhat as a splint does to an inflamed tubercular joint, giving the part physiological rest and allowing nutritive changes to occur in the infected part. Artificial withdrawal of the fluid in these cases not only removes this, but produces a traumatism. The effect of the effusion upon the opposite lung and the heart, together with the explanation of some of the symptoms and physical signs, while very interesting, are not germane to the discussion.

161 West Twenty-third Street.

NOTES ON TWO HUNDRED AND FIFTY CASES OF EPILEPSY.

By R. K. MACALESTER, M. D. (Zurich).

(Concluded from page 108.)

Psychical Epilepsy.—Among the atypical and rarer forms of epilepsy that present paroxsymal psychical symptoms, a synopsis of the following cases will be sufficiently interesting to warrant a recital:

Case I.—E. G., aged twenty-seven years, born in Canada, married at the age of sixteen years.

For over a year past has had absent-minded spells, occurring about twice a week and lasting about twenty minutes. During one of these attacks she washed a lot of old, worthless dust rags most carefully and then hung them out to dry. Another time she went out on the street with her baby in her arms, and before all the passers by she took out her breast and began to nurse it in the utmost nonchalance

After such attacks she generally goes to sleep for a while, and afterward has not the faintest recollection of what she has done or said. They have no relation to depression of spirits, but she is inclined to attribute the onset of her malady to worry from loss of a child.

Patient has a slight tremor about the mouth, especially just before speaking, and a spasmodic twitching of the left lower eyelid. Memory now rather bad.

Diagnosis.—Psychical epilepsy (*petit mal*).

Case II.—A. F., aged six years, born in the United States of German parents.

Family History.—Phthisis in father's parents and sisters; father a potator.

Patient was born at full term, well developed; no instruments; three days' labor. She nursed and grew well until two years old, but was backward in talking and walking. Had a voracious appetite at first. Her present trouble began at the age of two years, when one day, while running about in her room, she suddenly fell over without any apparent cause. Then it was observed that she would at times run around in a small circle and end by falling on the floor. The attacks, occurring generally in the morning, finally became simply rotary to the left. Her eyes would begin to roll to the left, followed by her body turning to the same side; then she would begin to scream and talk unintelligently. If standing when the seizure came on, she would invariably fall on the floor. Sometimes she would suddenly start, run around in a circle four or five times to the left, sink to the floor, and in a minute come out of the attack. Her face would always get red and flushed at first, then pale. She has several such attacks daily for a week or two, then she may go for one to eight months without any.

She is well developed now, teeth very bad, very willful and disobedient, and does not learn readily. Suffers from enuresis nocturna at times. In the intervals between the seizures there is no spasm or rigidity of any muscles.

Diagnosis.—Rotatory epilepsy.

Case III.—D. S., eleven years old, born in the United States.

For a year or more has had attacks of mental excitement, during which he has an uncontrollable impulse to go out of the house. During one of these he wandered out and seems to have got into a state of mental aberration, and was found two days later in Brooklyn; he remembers only that two men picked him up. On returning home, in New York, he did not recognize anybody for a whole week. He would soon recover from such seizures and then go into a similar one again, or would sing, cry, or dance. Under treatment with tonics and bromides there has been marked improvement, and the attacks have gradually grown less frequent. He now complains of fronto-occipital headaches and at times attacks of vertigo and somnolence.

Diagnosis.—Automatism, epilepsy.

Case IV.—A. R., twenty-six months old, born in the United States.

Four days previous to first spasm had a light fall out of bed, causing a slight bruise over the right eye which seems to have had no ill effect. Was able to talk quite well, but after the second attack did not utter a word for three weeks excepting some mutterings and mumbling which were unintelligible to the mother. During this period the motility of all parts of the body was unimpaired, but the child would frequently stumble and run its head against the wall and other objects, as if it were out of its mind. The surface of the body feels continually cold. While recovering from a seizure would scream and yell for a fortnight, and bite itself.

Now talks rationally, but at times as if it were foolish or delirious. Before last attack was a bright child, but is now forgetful. Is not vicious or peevish outside of such attacks. In appearance is very bright, burly, and intelligent.

Diagnosis.—Epilepsy (automatism).

Even these few histories go to show how diverse and manifold the psychical equivalents of epilepsy may be, and were we to go further into the enumeration of such cases we would find successively a vast variety of phenomena and transitional forms, from the mildest—such as epileptic vertigo, "*absence*" spells, etc.—to the severest, in which the strangest and most complex actions are performed, and emotion, violence, and rage are displayed.

I need scarcely refer to the fact that it is of the greatest practical and forensic importance for the practitioner to be able to make a correct diagnosis of psychical epilepsy. But this is in some cases extremely difficult, especially when the symptoms are of a mild type or when the seizures closely resemble those of hysteria, insanity, and so-called dual or triple personality. Not a few experienced diagnosticians have been shipwrecked on these cliffs. The name of epilepsia larvata, employed by the older physicians, is quite an appropriate title in a great many cases. Frequently it is only by observing such seizures when alternating with typical epileptic attacks, or occurring independently of them, but in paroxysms, in connection with other epileptic phenomena and stigmata, that the true nature of the disturbance can be detected.

In regard to *treatment* little remains to be said.

In dispensary practice it is difficult for both the physician and patient to follow out the therapeutic measures essential to success. However, the results of our clinic compare favorably with those obtained in others.

On reading over our records, I can conscientiously state that no time or trouble has been spared, or none of the numerous methods and drugs recommended by the profession left untried in endeavoring to relieve this unfortuate class of patients.

To judge from the results that are recorded, it would appear that our old standby, the bromide treatment, still ranks the first in our therapeutic armamentarium.

Flechsig's opium treatment has been in use in our clinic for nearly a year past. As the results of this last method are being embodied in a paper, to be presented by my colleague, Dr. Joseph Collins, I will content myself in this place with merely referring to this new plan of treatment. I may be permitted to say in advance, however, that it gives promise of very favorable results in suitable cases, and of being a most important addition to our therapeutics.

Literature referred to.

Echeverria. *On Epilepsy*, New York, 1870.

Eichhorst. *Handb. d. spec. Path. u. Ther.*, Bd. iii, Vienna and Leipsic, 1887.

Eulenburg. *Lehrb. d. Nervenkr.*, 1878.

Gowers. *Epilepsy and other Convulsive Diseases*, London, 1881.

Hamilton. *Nerv. Dis.*, Philadelphia, 1878.

Hammond. *A Treat. on Dis. of the Nerv. Syst.*, New York, 1881.

Putzel. *Funct. Nerv. Dis.*, New York, 1880.

Reynolds. *On Epilepsy*, etc., London, 1888.

Starr. *Famil. Forms of Nerv. Dis.*

Webber. *Boston Med. and Surg. Journ.*, May, 1893.

79 West Fifty-fourth Street.

A CASE OF
CYSTIC TUMOR OF THE FLOOR OF THE NOSE.

By JOHN DUNN, M. D.,
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Cystic tumors of the nasopharynx are comparatively frequent. I have several times seen small ones in the region of the pharyngeal tonsil; in two cases they were bilateral. Cysts are sometimes found in nasal polypi. With this exception, however, intranasal cystic tumors are, to quote the words of Bosworth, "among the rarest of occurrences." Neither in Bosworth's *Diseases of the Nose and Throat* nor in Burnett's *System of Diseases of the Ear, Nose, and Throat* is mention made of a cyst situated in the floor of the nose. The following case is therefore of interest:

Mrs. B., aged twenty-six years, first noticed three months ago that in the "corner of her nose" there was a small swelling. For the past three weeks it had grown rapidly, until on November 24, 1893, when she came for consultation, the following condition of affairs had resulted: Externally the region where the left ala nasi joins the cheek is seen to be unduly prominent; in a measure the sulcus here is obliterated. Examination of the interior of the left nose anteriorly shows an oblong, rounded, fluctuating swelling, extending from the nostril junction for about three quarters of an inch along the floor of the nose; it reaches from the sæptum internally to the external wall of the nose. The greatest depth of the tumor is about a quarter of an inch; this can, however, be increased by pressing against the angle of the nostril externally. No trace of the tumor can be seen along the *cul-de sac* between the upper lip and the alveolar process. This shows that the tumor is practically all intranasal. If, however, the little finger be inserted into the nostril and downward pressure be made, the tumor can be indistinctly felt in the *cul-de-sac*. The growth of the tumor has been painless. There are no inflammatory signs about its surface. It is fluctuating. A hypodermic needle was forced through the *cul-de-sac* into the tumor, and a syringeful of a thick, transparent, yellowish fluid was obtained. The tumor was opened with a knife from the *cul-de-sac*. The contents were forced out and the cavity packed with cotton saturated with a 1-to-1,440 bichloride solution. This dressing was changed daily and each time a saturated solution of boric acid was used for the purposes of cleansing the sac. After a few days the sac was washed out with tincture of iodine, following which it gradually diminished in size until, by the last of December, a complete cure had resulted.

In regard to the treatment of these cystic tumors (ranula, etc.), I would say the best results obtained at my hands have been from excising a portion of the sac wall, filling the sac with tincture of iodine, which is immediately washed out, and then packing the sac with cotton, which is to be changed daily until obliteration of the sac has taken place. It seems likely that the case was one of retention cyst, similar to those that occur with comparative frequency in the oral mucous membrane, chiefly on the inside of the lip. I am inclined to think its origin was just within the nose, its nearest point to the upper part of the *cul-de-sac* of the upper lip being too far distant for it to be likely that this cyst resulted from closure of an excretory duct of the oral mucous membrane, although such a thing is possible. Careful probing failed to reveal any condition of the lining membrane of the sac that would suggest the possibility of this being a case of *Zahncyste* (Zuckerkandl). There was no communication that could be made out with the teeth or with the antrum of Highmore, nothing to lead one to believe that any bone changes had given origin to this cyst, which must therefore be classed as a retention cyst of the floor of the nose.

BOWEL INVAGINATION.

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THE gynæcologist should be familiar with the anatomy, pathology, and treatment of all abdominal viscera. But it is not always possible to become familiar with all forms of abdominal surgery without experimentation on animals. Experiments on the human abdominal viscera are bought at too high a price and, besides, are unjust. For any ordinary abdominal surgeon to acquire passable knowledge of *intestinal invagination* he will need to experiment on animals, and for this purpose the dog is the most useful. Invagination is the projection of one portion of bowel into the adjacent segment. It is nearly always toward the rectum.

The cause of invagination is irregular action in the gut wall. The disordered movements of the bowel seem to be due to a lack of cerebro-spinal control over the sympathetic nerves, or some local irritation may induce it.

Invagination is chiefly a disease of childhood, when the sympathetic nerve is not under such a decisive control of the cerebro-spinal axis as it is in later life. In childhood the large vascular supply, the active peristalsis, and rapid growth with an extensive nerve supply to the digestive tract, render the bowel liable to disorders. Patients dying of cerebro-spinal diseases are apt to have the invagination of death, as found in the autopsy. I have found several invaginations in autopsies on dogs and human beings, but they were invaginations of the dying. Just before death the cerebro-spinal axis often loses control and the intestines become wildly disordered through lack of normal functions of the sympathetic. The invagination of the dying is non-inflammatory, and only the result of violent disorder among the bowels before they become still forever. But in the living, where we find the inflammatory invagination, the irregular action of the gut wall is the same factor in its production.

The statistics of invagination are significant as regards diagnosis. Invagination constitutes more than one third of all intestinal abduction. Twenty-five per cent. of all invaginations occur before one year of age; fifty per cent. occur before ten years of age. We may look for it especially in growing childhood. It has no previous history, but has simply a sudden onset. There is little doubt that the violent crying spells of babies lasting for several hours are cases of invagination which spontaneously disinvaginate. When young children are attacked with invagination, about ninety per cent. prove fatal. Shock kills them sometimes in twelve hours. Dr. Jaggard, of Chicago, secured a specimen by post-mortem which killed the child in about thirty hours. It was of the ileo-cæcal variety. The location of invagination is also significant in diagnosis. Fifty per cent. occur at the ileo-cæcal valve, thirty per cent. in the small intestine, and twenty per cent. in the colon.

The diagnosis of bowel invagination rests on—1. Pain, which is sudden in its onset. It is intermittent, because it does not cause complete obstruction. The dogs experimented on proved this. The pain is very severe and depressing. 2. Vomiting is not conspicuous, but arises. The dogs would not eat or drink, and so vomited slightly. 3. Tenesmus is very manifest, but especially so if the seat of the invagination approaches the rectum. 4. Blood in the stool arises in about eighty per cent. of cases. The blood comes from rupture of capillaries at the apex and neck of the invagination. Stools are mostly liquid from hypersecretion due to irritation. 5. A tumor can seldom be distinctly found. I could not locate a tumor in about a score of dogs.

The pathological anatomy I studied chiefly in the dogs used for experimental invagination and in several human cases. If one opens the abdomen of a dog under chloroform, seizes the bowel in the left hand, and lays hold of the gut with a vaginal dressing forceps, he can gradually push one piece of bowel into the adjacent segment. One had better wait until the first peristaltic wave of contraction has passed over. The invagination once started, glides freely forward. But it will be necessary to suture it in the invaginated position or it will soon disinvaginate itself. In making the invagination, one produces a structure composed of three layers of gut. The outer layer is the *intussuscipiens.* The inner and middle layers are the *intussusceptum.* We then have the outer, inner, and middle layers of gut wall, with serosa against serosa and mucosa against mucosa. Where the outer layer bends and becomes the inner layer is situated the neck. The lower end of the intussusceptum, or where the entering layer bends to become the returning layer, is called the apex. The dangerous points in an invagination are at the apex, neck, and center of the middle layer. In the dogs I found the apex sloughing in four days. The neck did not give way so soon, for the reason that it is not still except by a fixed invagination. If the invagination increase or decrease, the neck will move, and thus it is not so liable to slough. The main change quickly occurred in the middle layer. The return venous blood was obstructed, and it rapidly became œdematous and swollen. In the small intestine of a dog of thirty pounds it would swell as large as a hen's egg in two days, and frequently become gangrenous. The outer and inner layer suffered less. The gut above the invagination soon dilated and hypertrophied. The gut below the invagination continued very pale and anæmic. As the invagination became chronic, the changes in all the parts of the invagination became more pronounced. The middle layer, as well as the gut above the invagination, rapidly hypertrophies. The apex gradually sloughs away. The invagination becomes irreducible from œdema of the middle layer, but one can gradually squeeze the œdema out with the two hands pressing it; then by the aid of the finger below slowly push up the invagination. If the invagination becomes chronic, adhesions prevent the reduction.

The changes in an invagination in three days to a week were very extensive. The invagination vigorously disinvaginated, and would even tear out sutures to do it. I treated the invagination by anastomosis by the aid of my segmented rubber plate. The invagination is liable to produce bowel obstruction by (*a*) the mesentery narrowing the slit at the apex, (*b*) by thickening of the middle layer, (*c*) by some mechanical accident some indigestible substance might fall into the narrow slit of the apex. The rôle played by the mesentery is best observed by studying both a recent and chronic invagination. In an invagination of six inches long one can see that the mesentery is drawn out in the shape of a cone between the outer and middle layers. The longer the invagination, the tighter will be the compression of the roll of mesentery at the neck.

The middle layer may slough out entirely by becoming gangrenous at the neck and apex. It may be expelled *per rectum;* the gut may have its mucous membrane inside or outside. If the neck adheres to the apex sufficient to prevent fæcal extravasation, recovery may occur; but even then statistics show that nearly half of such persons die of stricture. Invagination is generally very acute in its action; but I know of one case in the ascending colon which lasted a year, and one case in a young lawyer which killed him in two years. In the last case the invagination was in the transverse colon. It is surprising how small, pale, and thin the middle layer can become by the pressure of the outer and middle layers of the invagination.

Meteorism is not at all conspicuous in invagination, because invagination produces only incomplete obstruction. The pain arises from excessive peristalsis at the seat of invagination. Sometimes the invagination can not be disinvaginated, because the middle layer is so œdematous and enormously swollen that it would tear the gut to accomplish it. Of course, one can take the invaginated bowel between the two hands and squeeze it until much swelling disappears, and then, by the aid of the index finger below, one is enabled to disinvaginate very severe cases. If it be in a very young dog, the gut soon gives way, and the same will occur in a young child, as tissues are succulent and friable and soon become œdematous by blood stasis and infection. Also in older cases the adhesions play a rôle to prevent spontaneous or manual disinvagination. Again, the irreducible invagination is extensive and it would be certain death to resect all of it, so the only hope lies in artificial anus or anastomosis. It must not be forgotten that frequently after manual disinvagination it will require an artificial anus, or resection, or anastomosis. For, after the gut is disinvaginated, it is found that the apex has sloughed an annular zone or the neck has one or more perforations, any one of which will demand artificial anus, resection, or anastomosis. One may turn into the bowel lumen small patches of gangrene and fix them by a few Lembert sutures. Time is an all-important matter in such work, for the patient has already suffered a severe shock from the trauma of the invagination. The shock is a profound change in the abdominal vascular system and is manifested through the abdominal brain or sympathetic system. In irreducible invagination it will be frequently found that the only feasible method is anastomosis rapidly performed. Mine were all done with rubber plates.

The effect of anastomosing the bowel above to that below the invagination by the aid of the rubber plates, without resection or reduction of the invaginated bowel, is very marked. The animal becomes more quiet. Vomiting diminishes. If one kills the dog a week after the anastomosis or the irreducible invagination he will be surprised at the shrinkage of the invaginated bowel excluded from the fæcal current. It has shrunk a quarter, a third, or a half. It has atrophied and become quite pale. The dark venous congestion has mainly disappeared, and frequently the length of the invagination has diminished. The changed direction of the fæcal current was the cause of the shrinking of the irreducible invagination. Food traveling over the digestive mucous membrane is what entices blood to the gut wall through some nervous mechanism. But when the fæces travel by another channel they induce the blood to follow. So, really, the invaginated bowel excluded from the active digestive tract simply starves or shrinks. Fæces do not collect in the excluded bowel.

Experience has taught me to give a wide berth to the invaginated bowel—*i. e.*, make the anastomosis some eight inches above and eight inches below the seat of invagination so as to avoid pathological bowel walls and circulation as well as deranged peripheral nerves. In small children and small puppies the gut is so small and friable that it is almost impossible to perform anastomosis. If an artificial anus is made and long maintained in a young patient, the gut below will grow but very little on account of changing the fæcal current, and in this way the future hope of re-establishing the intact digestive tract is lessened. It may be remembered that the old invagination might disinvaginate after weeks or months and the slough at the apex allow fæces to trickle into the abdominal cavity. Grafts torn from the omentum should be used on the anastomosis.

ASEPSIS,

WITH ESPECIAL REFERENCE TO ABDOMINAL SURGERY.*

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The cause of sepsis in surgical wounds is always the entrance of pyogenic organisms, without which there can be no suppuration infectious in character. This may occur from extrinsic sources or may be due to noxious matter from within, such as cyst contents, Falloppian-tube contents, etc. Our object, then, is to prevent contamination. How is this obtained? Infection from extrinsic causes may be avoided only by the strictest observance of certain rules in the preparation of the patient, operator, his assistants, the instruments, and dressings. It is only those things which come in direct contact with the wound that cause pus. Atmospheric infection is practically *nil*, for we know that very few, if any, pyogenic microbes are found in air. Of course, no one would operate in a ward or room containing any person with an infectious or contagious disease or in a dust-laden atmosphere. It has been shown by repeated examinations of air that ordinarily and usually no pathogenic germs are found; still we must, if possible, exclude even this remote factor. This necessitates specially prepared operating rooms, which should be constructed so as not to present any corners, the walls being painted with a washable paint and the floor made best of an artificial cement, with a drain so as to permit of its being flooded. All the tables in the room, whether for the patient, dressings, or anything else, should have either a plate glass or smooth marble top, so as to permit of being most easily cleansed. The woodwork, if any, should be of the highest finish for the same reason. Such an operating room, with all conveniences for modern surgery, has just been completed at the St. Joseph Infirmary, this city. Leather-top tables are an abomination and should never find a place in the operating room.

Before the operation the walls and furniture should be wiped with a moist, clean towel, but never dusted. This may be easily done and the walls remain perfectly white if they are painted with a zinc paint and then varnished.

But these preparations are of less importance than the preparation of the operator and his assistants, for they are one of the most frequent sources of wound infection. The operator and assistants should each have taken a hot bath and changed his linen either the night before or the day of the operation, and thoroughly washed the hair and beard. In fact, long hair or beard is out of place on an operator, and often have I seen perspiration run over the face and through the beard or trickle down from the scalp and fall in the wound. Do you wonder that sepsis is sometimes unexplained? Immediately before the operation, having taken off coat, vest, collar and cravat, and cuffs, the hands and arms should be thoroughly scrubbed, the assistants being just as careful in this respect as the operator himself, for even if they do not handle the wound, they do come in contact indirectly with it, in that they handle instruments, sponges, etc. In fact, all spectators should be compelled to follow the same rules, as an emergency may arise or they may forgetfully or unconsciously touch the instruments, etc. They should also don long white aprons with sleeves, as should also those to be engaged in the operation. These aprons should cover the clothes entirely and should have been previously thoroughly sterilized by moist heat. To return, however, to the cleansing of the hands, which, gentlemen, is a most important factor in this chain we are forging, and one that is often not carried out as it should be. The length of time spent in scrubbing is not so important, as it depends upon practice, dexterity, and knowledge of where and how to clean. How often have we seen men spend ten to fifteen minutes scrubbing the hands, but with what a brush! With perfect safety a brush may be used only once. It should be new (and they can be purchased for fifty cents a dozen) and have been previous to use sterilized for a half-hour in streaming steam. After being used once it should be thrown away. In this city there is only one operating room where I have seen this method followed; in some other places the same brushes are used time and time again, the only precautions being to keep them immersed in the interval in a 1-to-2,000 solution of bichloride of mercury. This solution of bichloride merely retards the growth of the organisms for the time being; it does not destroy the spores, so that when we again use our brush we are doing what we try not to do—instead of cleansing, we are bringing our hands in contact with organisms. Even after washing out our brushes thoroughly and resterilizing in steam, they may only be used three or four times at the most, so that the plan of buying cheap brushes and using them only once is really less expensive and far safer.

Having then thoroughly cleansed the hands and thus mechanically removed all the organisms possible, they may be immersed in a 1-to-1,000 bichloride solution for three to five minutes and rinsed in clean sterilized water or washed in alcohol. The mechanical cleansing is, however, of the most value. The nails must, of course, be pared and cleansed. Simply immersing the hands for a few minutes in a strong solution of an antiseptic is of little if any value, but is only practiced by those who pretend to know and are really ignorant of asepsis.

The operator, then, having prepared himself, should prepare his patient quite as carefully. The patient should have, previous to the operation, a bath and the parts should be shaved, and, in abdominal work, this shaving should extend to the pudendum. After shaving, the parts should be thoroughly washed again and covered for at least twelve hours with a towel saturated in a solution of bichloride (1 to 2,000 or 1 to 3,000). At the time of the operation, this towel being removed, the parts should be thoroughly washed with ether or with alcohol to remove the fat, thus getting away any dirt or septic matter that might be in the deeper layers of the skin.

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* Read before the Falls City Medical Society, November 2, 1893.

In such operations as vaginal hysterectomy for cancer the cavity of the uterus should have been previously curetted and the vagina cleansed with bichloride solution. The patient should be attired on coming into the operating room in nothing but a gown (which should be thoroughly clean) and a pair of new stockings. After being put upon the operating table, it is only necessary to cover the chest and legs with a clean blanket, or, in doing operations upon other portions of the body, to cover all parts of the body except that which is to be exposed to operation. These blankets may in turn be covered with sterilized towels. In abdominal work it is especially desirable that thorough purgation should have been done, which is best accomplished by means of salts given every morning for several mornings previous to the day of the operation. This cleanses out the bowels thoroughly so that there will be no distention, and also prevents extravasation of the intestinal contents, should we be so unfortunate as to damage the bowel. So much, then, for the patient.

The instruments in abdominal work, or in work where the operator has time to prepare for the operation, should be sterilized, best in a steam sterilizer; by instruments I mean also needles and sutures. If this is not possible, and the sterilization of instruments must be rapidly done, it can best be accomplished by immersing them for ten or fifteen minutes in boiling water, to which it is well to add a little soda to prevent rusting of the instruments. The instruments coming out of either the soda solution or the sterilizer should be kept covered with water which has been boiled and which is still warm. The instruments should be rinsed repeatedly in water during the operation to wash off any blood clots which may have formed on them. The sutures, if we are to use silk or worm gut, which are far preferable to catgut, may be sterilized also, as I have said, in the incubator, or by means of boiling water. Of course, this method is not applicable to the sterilization of catgut. In the use of catgut it is probably best to follow the method used in von Bergmann's clinic as given by Schimmelbusch. This consists of "immersing the catgut sutures in a one per-cent. solution of sublimate in eighty-per-cent. alcohol, in which they are left at least forty-eight hours, but even better still a longer time. This sublimated alcohol is better if changed every two days until the fluid remains perfectly clear; they are then preserved for use in ordinary alcohol." By this method it has been shown that catgut is rendered perfectly aseptic. I have examined bacteriologically silkworm gut and catgut which had been sterilized in these ways, and have never been able to demonstrate any organisms. The preservation of catgut in various oils is, in my opinion, not a good method, as in examinations of catgut preserved in a three-per-cent. carbolized oil, and also tendons which had been preserved in the same way, I have been able to demonstrate numerous colonies of micro-organisms. Whether or not these were pathogenic I have not had an opportunity of demonstrating by experiments, but have seen stitch abscesses follow their use.

As to sponges and material that is to be used for sponging during the operation, I believe the cheaper and better plan is to use especially prepared and aseptic sponges. The method of preparing these sponges which seems to me to have given the best results is that of rendering them aseptic by means of sulphurous acid and repeated washings in sterilized water, then immersing in absolute alcohol. This absolute alcohol sometimes hardens the sponges, but they again become soft after being soaked in water. The method of keeping sponges sterile by immersing in bichloride solution and in carbolized solution is a bad one, as in the case of sublimate it is with great difficulty that we are able to wash the sublimate from the pores of the sponge, and may in this way carry the sublimate solution into our fresh wound, which is undesirable, as you all know. In the case of carbolic-acid solution, I have found that my sponges soon rot. This, however, is not due to the formation of any bacteria, but seems to be due to the action of the water. Sterilized gauze may be used also, but can not be rinsed as nicely as sponges or used more than once, and so is really more expensive.

Where it is desirable to hold back the intestines in abdominal work, I think the large flat gauze sponges are more serviceable than the others. We should, however, always take the precaution of tying a string to one corner so as to be able to bring them easily out of the cavity again. If these are not at hand, a sterilized towel may be used equally well. No water to which any chemical germicide has been added should be brought in contact with a fresh wound, nor in the abdominal cavity to any wound even where pus has been present, as results have shown that these strong germicides destroy the epithelium covering the peritonæum, thus rendering absorption much easier. At the same time they do not destroy the organisms; the best that they can do is to retard their growth for a short while. So that in irrigation of the abdominal cavity or in sponging the abdominal cavity or fresh wounds that the surgeon may have made anywhere, it is advisable to use sterilized water. It is not necessary that this water should be filtered, nor is it necessary that it should be distilled water; it can be sterilized by simply boiling and allowing it to cool, when the sediment of mud which we find in our water here will settle to the bottom, giving us clear water above, which may be used. In wounds, even where extensive contamination of the peritonæum has taken place by rupture of pus tubes, the organisms may be almost completely removed mechanically by irrigation with this sterilized water. Of course, we also rely upon drainage to carry off septic matter remaining behind and in shutting off the cavity from above to prevent contamination. For this drainage it is preferable to use sterilized gauze, should the adhesions have been extensive, or should there be a large cavity which should heal from the bottom, or should there be much bleeding. Drainage-tubes may also be used with the gauze. In the use of gauze a point which I believe is important, especially in procuring good drainage, is to be careful not to pack the gauze too tight. Be also careful not to compress the intestine. If we pack too tightly, we really prevent, to a certain extent, what we desire to obtain—perfect drainage. Also, in the use of gauze, an objection which we have to it is the fact that frequently sinuses are left behind. These are not so often seen in the use of the drainage-tube; in fact, very seldom if provisional sutures are put in which are closed when the drainage-tube is removed. The ideal drainage-tube is the glass one, not only for the reason that it does not bend or is ever compressed, but can also be most easily sterilized. It should be sterilized at the same time we sterilize our instruments.

In suturing we may use the same needles repeatedly, but they should not pass through the hands of too many assistants. The needles and sutures should be kept covered during the operation, and should be only uncovered just previous to use, they, of course, having been sterilized, as I have mentioned before, along with the instruments. Even, however, with all this care it has been shown that infection may take place in the stitch wounds, due to organisms in the deeper layers of the skin which can not be removed (Welch).

Another point in suturing to which not enough attention has been paid is tension on the suture. We should not make great tension for the reason that if we do we cause the mechanical death or necrosis of tissue non-septic in character, but which readily becomes septic, or at least affords a nidus for organisms. In dressing, after the wound is closed, it should always be thoroughly dusted with crystallized iodoform. Iodoform is not only an antiseptic on account of the iodine it contains, but also prevents germ growth by its rapid absorption of the secretions and its rapid drying, thus sealing hermetically any wound to which it may be applied, provided, of course, this wound is not too great in area or the discharge of serum therefrom too great in quantity. After dusting thoroughly with iodoform we may put on sterilized gauze. The use of gauze impregnated with bichloride of mercury is bad practice, as is also the use of gauze which has been impregnated previous to the operation with iodoform. In the case of bichloride we have the crystals of the bichloride in the meshes of the cloth, which are perfectly inactive as preventers of germ growth, as the only way possible in which mercury can act is in solution. Now, if the mercury is in solution where gauze is necessary, then we do not obtain perfect absorption of our wound secretion. The same can be said of iodoform gauze. The only way in which iodoform can be used in connection with gauze is to dust it into the gauze and rub it in at the time of the operation. In impregnations with iodoform it is always necessary to use glycerin and some solvent of the iodoform. These, of course, keep the gauze necessarily moist, and we have the same thing as we do in the use of moist bichloride gauze. Having thoroughly covered the wound with gauze, we bring over this a layer of sterilized cotton, and then either a flannel binder which has been thoroughly sterilized by steam or the Scultetus bandage. Where we have used a drainage-tube or where it is necessary to leave on forceps for the control of hæmorrhage, we can pack around these forceps with gauze, or with the drainage-tube we may leave an opening for the tube to pass through the dressing, covering the opening of the tube with sterilized gauze and with a rubber dam. This rubber dam and also the pin with which it is held should have been sterilized the same as our instruments in the steam sterilizer.

The point which I have desired to bring out in this paper is the entire absence of any mechanical germicide during the operation, except in case of preparing the hands, and even then it is not necessary and often gives a false sense of security. Bichloride is perfectly inactive as a germ destroyer in the solutions ordinarily used. Its only action is to prevent the growth of organisms for a short while, and at the same time it renders the tissues with which it is brought in contact better able to take up and absorb these organisms. Mechanical removal of offensive matter is the ideal method. What we desire is absolute cleanliness. We can very often procure an aseptic condition in a septic wound by these methods. In cases where we have removed pus tubes and where we think we have left behind a portion of the tube, or, as in cases of possible ligations in appendices, where we desire to render the canal aseptic, this may be best done by touching with pure carbolic acid and stitching the serous coat over the end.

After abdominal operations the pulse should be carefully watched, as it is really a better indicator of the condition inside of the abdomen than the temperature. By it we are enabled to tell a great deal more. I have seen abdominal cases where the temperature would go up to 104° F. where the wound had been reopened and absolutely no pus found. The cause of this rise in temperature may sometimes be found in the excessive use of iodoform, but this should not argue against its continued use. We might as well argue against the use of morphine because some patients have peculiar idiosyncrasies for this drug. We should purge early enough and thus drain through the bowel as well as through the external wound. Salines are the ideal purgatives, but they may also be contraindicated where there is much vomiting or nausea. In these cases it is better to use calomel, repeated every half-hour, with high enemata of glycerin and water, or of water containing in solution salts for the purpose of producing catharsis. After the bowels once begin to move, when our patient begins to pass abundant gas, we may usually feel easy.

In closing, I desire to express my thanks to my friend Dr. Wathen for suggestions made and observed while I was assisting him in his work.

The Section in Neurology of the New York Academy of Medicine.—At the meeting of the 16th inst. Dr. Frederick Peterson was elected chairman and Dr. Joseph Collins secretary for the ensuing year.

THE
NEW YORK MEDICAL JOURNAL,
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Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, FEBRUARY 24, 1894.

TRANSFUSION AND SENSATIONAL JOURNALISM.

The effort to save the life of another at the risk of one's own life has always been held one of the highest forms of heroism, for greater self-sacrifice and nobility can hardly be imagined. It is but natural, then, that occurrences of this nature should ever attract our interest and admiration. Accordingly, to our daily papers such cases are always welcome material.

To the lay mind, medical and especially surgical matters have always been associated with mysticism (the direct cause of unwholesome curiosity) which time has not yet succeeded in entirely removing. When, then, we find the effort to save life at the cost of personal danger associated with surgery we have all the material for ministering to a morbid appetite and an unhealthy curiosity in the lay reader. To the catering to this demand our daily press is ever tempted, and, in so far as it yields, and especially where it exaggerates, its action can not but be considered sensational and heartily to be deprecated.

The operation of transfusion is especially the occasion of this sensationalism, and during the present winter several instances have occurred in which, in bold and startling headings and ridiculous, theatrical, and generally erroneous details, our daily press has recorded this operation.

To bleed a patient is surely not such a terrible thing; in fact, it was formerly done most extensively and as a therapeutic procedure often of great value, and it is certainly true that many men to-day would be healthier and stronger for the losing of a little blood. It is not to be supposed that in transfusion an intelligent operator would select a weak and anæmic donor; both for the sake of the recipient and for that of the donor, such action would be absurd. And a competent operator is not likely to remove from the donor a quantity of blood larger than he is well able to lose. To the full-blooded donor the disposal of a small quantity of his blood will scarcely cause anxiety, and, selfishly speaking, it must be a matter of profound indifference to him whether it enters the vessels of another or is thrown away. Where, then, lies the "heroism" of the properly selected and properly bled donor? Surely it is only in the columns of the paper which sensationally reports it. That it is a humane thing to give one's blood to another who needs it can not be denied; but that it is heroic, when one does not need the lost blood and may even be benefited by its withdrawal, is absolutely false.

As a matter of fact, the donor of the blood is seldom, if ever, injured by the operation, and we can not recall a case in which, when the operation was properly done, he ever suffered more than the merest temporary inconvenience therefrom.

The cure for such unhealthy journalism rests with the papers themselves. If they must publish such things, let the reports be written by medical men and let them be honest. But, better yet, let them not be published at all, for the absurdity of "popular" medicine and surgery as presented by our non-professional press is self-evident.

MINOR PARAGRAPHS.

THE ÆTIOLOGY OF HEADACHE.

In a recent number of the *Revue générale de clinique et de thérapeutique* Dr. S. Vermel, after a thorough study of the subject, says that he is inclined to attribute all headaches to an oversensitive condition of the sympathetic nerves controlling the peripheral vessels of the cranium and brain, or to an angeioneurosis. It may be asked at once, he says, how the same symptoms, from the same cause, can be present in diametrically opposed conditions, such as plethora and anæmia, febrile and apyretic diseases, for example. The idea that the seat of pain is in the cortex has not been substantiated, for when a cortex is irritated there is locally only an hallucination of pain; the real pain is exhibited on some part of the body. Then, if the attack of cephalalgia is not due to local irritation of the cortex, the seat of the trouble must be in the meninges. It is to dilatation of the vessels of the meninges, causing intracranial pressure, that the pain is due. The vascular dilatation extends to the minute blood-vessels in the region of the pituitary body, rupture of which gives rise to the epistaxis from which patients so frequently suffer during an attack of headache. It is clear how this explanation answers for hyperæmic conditions, but how does it account for the same symptoms in anæmia? In anæmia there is a qualitative and not a quantitative change in the blood, the amount of fluid in the vessels remaining the same. In veritable anæmia from excessive depletion of the system, as from hæmorrhage or cholera, the condition is different; but from the anæmia coincident with neurasthenia, hysteria, chlorosis, and so forth, there is, so far as quantity is concerned, the same condition as in hyperæmia.

In anæmia the vessels are very prone to dilatation, producing an exaggeration of the intracranial pressure, in consequence of overexcitability of the vaso motor centers allowing of local hyperæmias.

The author definitely states that the seat of pain in headache is always in the dura mater and not in the cortex; that the pain is provoked by compression of the dura mater produced by increased intracranial pressure; and that this is true of all headaches, whether neuroses, or of toxic or mechanical origin—such as diseases of the brain or of the meninges, constipation, etc., or of reflex origin.

AN OBNOXIOUS LAW.

In the trial of a suit to recover damages for injuries sustained on one of the elevated railroads of New York it came out recently that not long ago the State Legislature had enacted a law containing a section making it incumbent on the court in such cases to order a physical examination of the person alleged to have been injured. In accordance with this provision of the law, Judge Pryor appointed two physicians to examine the plaintiff, and a referee to be present at the examination, to see that justice was done. The plaintiff in this case is a young woman, and her counsel objected strenuously to such an order alleging that the law was unconstitutional, and that to carry out such an order was to violate one of the fundamental rights of a citizen. We have no doubt that these objections are well founded, and indeed the judge himself seems to have thought as much, but there was nothing for him to do but to obey the law. It was said by the late General Grant that the best way to obtain the repeal of an odious law was to enforce it, and it is to be hoped that this attempt of Judge Pryor's to carry such a law into execution will bring the matter up in such a light before the Legislature as to secure the speedy repeal of the law. Not only is the enforced examination of anybody's person an outrage, but a physical examination at the time that a suit is brought is in most instances well-nigh useless as bearing upon the merits of the case. It is to be hoped that this case will not be allowed to drop out of the attention of the public. The reflections that any right-minded person could not avoid falling into in regard to it ought to lead to a general demand for the blotting out of so unjust a statute.

PARESIS OF THE SUPERIOR RECTUS.

This affection, which has long been considered rare, was the subject of a paper read at the Section in Ophthalmology and Otology of the Academy of Medicine last Monday night, by Dr. Alexander Duane. He has seen a number of cases, and believes that they are by no means uncommon. The symptoms are vertical diplopia, often present only when the eyes are turned upward, with tilting outward of the image formed in the eye with the affected muscle, and exophoria in varying degrees with the attendant symptoms. Both superior recti may be affected, or a compensating spasm of the inferior oblique may cause the appearance of paresis of both superior recti. Repeated examinations appear to show that the condition remains about the same, except that the exophoria slowly increases. Usually no cause has been found. It appears mostly in young persons, refractive errors are not necessarily present, and it probably dates from childhood, possibly from birth. It seems not to be of nerve origin, but to be a weakness of the muscle itself. Dr. Duane recommends for the treatment exercise of the internal recti by prisms, and rarely advancement of the paretic muscle. Prisms with the bases in are sometimes worn with advantage for distant vision, but when the eyes look downward they are not needed to the same degree; so different glasses should be used for reading.

VIVISECTION.

The American Association for the Spread of Knowledge upon the Extent and Existing Methods of Vivisection asks the assistance of the medical profession in its efforts to prevent the infliction of unnecessary suffering on the animals used in the laboratories, in class demonstration, and by medical students. "Believing on good evidence which we shall be happy to submit to you," says a circular issued by the association, "that vivisection is often practiced in a needlessly cruel manner, convinced that many abuses exist which could be reformed without any loss to science, knowing that the young student passes through a period of insensibility to the sight of suffering, a condition from which the mature physician is fortunately exempt, we solicit your co-operation in our efforts to save animals from useless torture. We feel that our best suggestions and our most effective help must come from the medical profession itself, especially from those eminent physicians whose labors in the service of humanity give their words and example an authority which would do much toward abolishing the evils to which we venture to call your attention." This is most temperate and reasonable, and we feel that the association ought to be accorded the hearty co-operation of physicians. The secretary's address is No. 58 West Fifty-seventh Street.

LECTURES TO PHYSICIANS ON ELECTRICITY AND MAGNETISM.

In view of the daily increasing importance of electrotherapy, the interest that attaches to electricity itself is constantly becoming more clearly evident to physicians, and the necessity for a more widespread and detailed acquaintance with the physics, the principles, and the measurements of electricity and magnetism is apparent to many physicians. It will interest our readers to know that a request has been made by several well-known physicians for a series of evening lectures on this subject from Mr. A. E. Kennelly, vice-president of the American Institute of Electrical Engineers and chief electrician of Mr. Edison's laboratory, Orange, N. J. It is proposed to hold this series of ten lectures at the Mott Memorial Hall on Tuesday evenings, beginning on March 6th. They will be illustrated by lantern and apparatus, and opportunity will be given for inquiries at the close of each lecture. Subscriptions will be open only to physicians and post-graduate students. Further particulars may be obtained from Mr. J. W. Gladstone, of No. 110 East Twenty-third Street, New York.

THE MEDICAL PROFESSION IN HOLLAND.

The curious story comes from Chicago that recently a Dutch physician of that city inserted a fraudulent advertisement in a Dutch medical journal, announcing that free transportation and an income of $5,000 a year was guaranteed by the Government to a physician with the Dutch qualification, and requesting applicants for the place to forward their diplomas for inspection. The Chicago Dutchman is said to have alleged as his reason for inserting this advertisement that when he came to this country an article had appeared in one of the Dutch newspapers saying that only the least successful of the physicians of Holland found it necessary to leave their country. It is further stated that many answers have been received by the Dutchman, but we do not see how that fact either proves or disproves the statement made in the Dutch newspaper, for the quality rather than the number of the applicants would have to be known to settle that question. It is suspected that the man either wished to obtain a diploma which he could parade as his own or else designed selling these diplomas to unqualified persons in quest of an opportunity to practice.

THE STATE COMMISSION IN LUNACY.

The present aspect of the controversy between the commissioners and the superintendents of the State hospitals for the insane is so petty as to take the dispute out of the limits of things that the medical profession cares to give its attention to. The commissioners are harping upon the allegation that the superintendents had lavished money in the purchase of wines, cigars, and delicacies, and the superintendents retort that the commissioners showed no hesitation in availing themselves of these comforts on the occasions of their visiting the various institutions. If the contestants will persist in giving prominence to this trivial feature of their controversy, they can not expect interest to be taken in it by those who only seek to have the State care of the insane as humane, efficient, and inexpensive as possible.

ITEMS, ETC.

The German Medical Congress.—The author of a printed circular dated Wiesbaden, January, 1894, but having no signature, states that he has received from Dr. Emil Pfeiffer, acting secretary of the *Congress für innere Medicin*, a statement to the effect that, in order not to conflict with the coming International Medical Congress, the next meeting of the German organization will not be held until the year 1895, when it will take place in Munich.

The Nurses' Bureau of the Academy of Medicine was opened on February 5th, for the purpose of providing reliable nurses for physicians and for patients. Each nurse who registers will be charged a fee of $2 a year for registry, and will be required to have an indorsement by two reputable physicians, who will be written to minutely as to their knowledge about her character and capacity as a nurse. Each time that a nurse is taken out by a patient a fee of $2 will be required of the patient for this privilege. When a nurse leaves a case the physician for whom she has been nursing will be written to for minute details as to her management of it, and in many instances the friends of the patient will be written to also. If a nurse notably fails in the performance of her duties she will not be permitted to have the privileges of the bureau.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 11 to February 17, 1894:*

A board of medical officers, to consist of Alden, Charles H., Colonel and Assistant Surgeon General; Forwood, William H., Lieutenant Colonel and Deputy Surgeon General; Smart, Charles, Major and Surgeon; Reed, Walter, Major and Surgeon; and Merrill, James C., Captain and Assistant Surgeon, is constituted to meet at the Army Medical Museum Building in this city (Washington) on the 12th day of March, 1894, at ten o'clock a. m., for the examination of candidates for admission to the Medical Corps of the Army.

Smith, Joseph R., Colonel and Assistant Surgeon General, is granted leave of absence for one month and ten days, to take effect upon the adjournment of the Eleventh International Medical Congress to be held at Rome, Italy, March 29 to April 5, 1894.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending February 17, 1894.*

Price, A. F., Surgeon. Ordered to the Torpedo Station, Newport, R. I.

Ames, H. E., Surgeon. Detached from the Torpedo Station and ordered to the Richmond.

Barnum, M. W., Assistant Surgeon. Ordered to temporary duty on the Ranger, and, upon the reporting of relief, detached from the Ranger, ordered home, and to wait orders.

Smith, G. T., Passed Assistant Surgeon. Detached from the Naval Hospital, Chelsea, and ordered to the Ranger.

Pigott, M. R., Assistant Surgeon. Detached from the Richmond and ordered to the Naval Hospital, Chelsea.

Bayley, T. B., Passed Assistant Surgeon. Detached from the Machias and ordered to the Richmond.

Keeney, James F., Passed Assistant Surgeon. Died on board the U. S. Steamer Ranger, February 10, 1894.

Society Meetings for the Coming Week:

Monday, *February 26th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *February 27th:* New York Academy of Medicine (Section in General Surgery); New York Dermatological Society; Buffalo Obstetrical Society; Boston Society of Medical Sciences (private).

Wednesday, *February 28th:* New York Academy of Medicine (Section in Laryngology and Rhinology); American Microscopical Society of the City of New York; New York Pathological Society; New York Surgical Society; Metropolitan Medical Society (private), New York; Auburn, N. Y., City Medical Association; Medical Society of the County of Albany, N. Y.; Berkshire, Mass., District Medical Society (Pittsfield); Philadelphia County Medical Society.

Thursday, *March 1st:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

Friday, *March 2d:* Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *March 3d:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private), N. Y.; Miller's River, Mass., Medical Society.

Letters to the Editor.

A MATTER OF NAMES.

New York, *February 6, 1894.*

To the Editor of the New York Medical Journal:

Sir: In the *Journal* of January 27th there appeared the report of a clinical lecture delivered in October by Dr. Robert T. Morris, entitled An Inch-and-a-half Incision and a Week-and-a-half Confinement in Appendicitis. While the title of the paper and its general tenor might perhaps be fairly considered open to criticism, yet it is not my purpose now to find fault with them.

The part of the lecture to which I wish to take exception is that in which the traditional A. and B. of medical literature give way to Jones and Smith. There are in the latest medical directory six Joneses and twenty-two Smiths, and as one of the former I object to an innovation which is in exceedingly bad taste outside of *Punch* and *Puck*. It is quite possible that difference of opinion with reference to the advisability of an operation in appendicitis may occur between medical men, but, if it ever did or should manifest itself in terms such as the author quotes, then the pencil of Hogarth would not libel the profession of to-day any more than it did that of his time.

By all means let Brown, Jones, and Robinson still adorn a tale in general literature, but let the literature of our profession stick to plain A. and B. or X., Y., and Z, and let medical writers go about their work in sober earnest. S. S. J.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

Meeting of January 3, 1894.

The President, Dr. Frederick H. Wiggin, in the Chair.

Carcinoma of the Breast.—Dr. F. H. Wiggin presented a patient showing the result of operation for this condition. She was sixty-one years of age and had a good family history. In June, 1892, she had first noticed a tumor in the left breast which had been of the size of a robin's egg. During the ensuing year it had grown rapidly and had become painful. By the advice of a quack it had been poulticed until the skin had become ulcerated. When seen by the speaker on December 12, 1893, there had been a large tumor in the center of which was an extensive ulceration discharging very offensive pus. The axillary glands were involved. The diagnosis of carcinoma had been confirmed by microscopical examination by Dr. Dunham, and the operation had been performed on December 13th. The tumor had been so large that after its removal there had been a space measuring about five inches in its short diameter. Recalling Dr. Shrady's method of sliding the skin to cover in such areas, an incision had been made at right angles to the short axis of the oval, and a flap above and below had been slid in to fill up this oval area. This had left a large oval above, but, by dissecting up a long flap across the front of the thorax, the integument had been sufficiently loosened to admit of closing this gap. There had been considerable oozing after this extensive dissection, but the free application of peroxide of hydrogen had almost immediately stopped the hæmorrhage, and when the dressing was changed five days later, it had been hardly discolored. Primary union had occurred except at one small point, where, owing to excessive tension, the part had sloughed. The result had been certainly better than that usually following skin grafting.

Diphtheritic Paralysis of the Neck Muscles.—Dr. W. R. Townsend presented a little girl who had been brought to the clinic at the Hospital for Ruptured and Crippled with a diagnosis of Pott's disease. It had been found that the child had had diphtheria last November, and had recovered from it, but that one or two weeks afterward she had fallen from her chair, and then the head had been noticed to drop forward. In the past year or two a number of such cases had been seen at the hospital where the diphtheritic poison had affected the posterior muscles of the neck, allowing of a dropping forward of the head and an undue prominence of the cervical vertebræ. If this were a case of Pott's disease, it would be impossible to put the head into normal position by simply lifting it with the hand, and, moreover, there would be thickening of the vertebræ. Another important distinguishing feature was that in the morning on awakening, the child was able to hold up the head better than later in the day.

Again, in Pott's disease there was much pain if the head were moved, and marked spasm of the spinal muscles. In this case both these symptoms were absent. The position of the head was also slightly different from that usually found in Pott's disease; the chin pointed toward the chest and was exactly in the median line, while the majority of cases of cervical bone disease deviated to one or the other side. The sudden onset and the previous history of diphtheria were also aids to the diagnosis.

Anomaly of the Rectum.—Dr. J. M. Byron presented a female child whom he had first seen two days after its birth. He had not seen an exactly similar case in this city. The rectum opened into the vagina, and the fæces were retained perfectly by a sphincter in the vagina until the rectum became filled with fæcal matter. No operation had been advised when the case was first seen because there seemed to be a difference of opinion among surgeons as to the desirability of operating at an early age.

Dr. J. F. Erdman said that the proportion of recoveries after operation for fistula connecting with the vagina was exceptionally large. He would be in favor of deferring operation until the child was older.

Crushing Injury of the Foot.—Dr. Wiggin exhibited a patient who had sustained a compound, comminuted fracture of the tarsus. The tendons had been sutured and deep buried sutures had been passed through the structures of the foot.

Thiersch's Skin Grafting.—Dr. J. F. Erdman presented a case illustrating the value of this method of grafting in certain extensive injuries of the soft parts. The patient was a man, forty-four years of age, a brass worker, who while shoveling slag into a crusher had had his arm caught in the machine, and an area of about fifty square inches around the elbow entirely denuded so that the tendons and muscles in this region had been exposed as though by a careful dissection. There had been a complete laceration of the brachial artery just above the elbow and of the radial and ulnar about an inch below the elbow; the external and internal cutaneous nerves and a portion of the median had also been injured. When first seen about ten days after the injury, there had been a slough on the anterior surface of the forearm of about forty square inches; there had been considerable œdema of the hand, which had been cold and blue, and there had been no pulsation over the radial and ulnar arteries. About twenty-seven inches of skin graft had been applied according to Thiersch's method. The grafts had been placed directly on the supinator, pronator, and portions of the biceps muscles, and also on the brachialis anticus and triceps. There had been no recovery of sensation of external and internal cutaneous nerves, but there had been some in the parts supplied by the median nerve. There had been no return of circulation in the main vessels of the extremity. It was worthy of note that there was no cicatricial contraction of the parts, and that the patient was able to go to work about fifteen days after the grafting.

Since having this case he had tried the skin grafting according to Krause's method, and in another case of the kind he would prefer it, as the grafts were more flexible. In the Krause method simply the true skin was cut off, and the flap transplanted as in Thiersch's grafting, being careful to take off all the areolar tissue and to apply it to a dry surface. In the Hirschberg method the graft included the areolar tissue, and was stitched to the edges of the part to be grafted.

Dissections of the Ear.—Dr. Gorham Bacon exhibited a number of beautiful dissections of the ear made by Politzer.

The bone preparations showed the relative positions of the tympanic cavity and mastoid cells.

The Effect upon the Lungs of Effusion into the Pleural Cavity.—Dr. Egbert Le Fevre read a paper on this subject and illustrated the physics of the subject by an interesting demonstration. (See page 235.)

Dr. Hermann M. Biggs discussed the ætiology. He said that in considering the ætiology of pleurisy with effusion the active factors might be included under three heads—viz., microbes, chemical substances in the blood, and new growths. The microbic type might be subdivided into infectious new growths, such as tubercle, actinomycosis, and possibly gummata, and those in which the process was purely inflammatory. The bacteriology of simple pleurisy with effusion had been pretty thoroughly investigated during the last few years, and a number of micro-organisms found. In the large majority of cases these were confined to a few types. In about seventy-five per cent. of all sero-purulent or purulent pleurisies which were not tubercular one of three types had been found—the pneumococcus of Fraenkel, the staphylococcus, or the streptococcus. The pneumococcus of Fraenkel was present in a very much larger proportion of cases than any other form, and in the type of pleurisy in which it was found the exudation, as a rule, was not very extensive, and was sero-purulent or fibrino-purulent. These pleurisies, as a rule, even though purulent, eventually resolved, and in those cases which did not resolve there was usually a secondary infection from pathogenic organisms—staphylococci or streptococci. Where streptococci were present an effusion originally serous very frequently became purulent, and when the staphylococcus was present in the serous effusion it could be predicted that that effusion would become purulent. Not many years ago we were taught that many cases of simple serous effusion became purulent as a result of tapping and infection; undoubtedly many of these cases were of the type mentioned, and in which the purulent exudation did not take place until relatively late. Occasionally the effusion would remain serous even when large numbers of staphylococci were present. Pleurisies in which streptococci were found were more commonly secondary and were associated chiefly with acute infectious diseases, such as scarlatina, measles, whooping-cough, diphtheria, broncho-pneumonia, and typhoid fever. They were usually much more serious than the other type.

Aside from the foregoing common forms, other types of micro-organisms were occasionally found. Inflammations in the pleura might be produced by all sorts of other organisms, such as the typhoid bacillus, the *Bacillus coli communis*, and various saprophytic organisms. Among the conditions in which the organisms tend to produce infectious new growths were tubercle, actinomycosis, gummatous inflammations of the pleura, and, more rarely, leprosy and glanders. The syphilitic form should receive more attention than hitherto. Some of the dry pleurisies attributed to tuberculosis were undoubtedly due to syphilis, and they resolved rapidly under the administration of iodide of potassium, although obstinate to all other treatment. Tubercular pleurisies were now known to be far more common than formerly supposed, some writers going so far as to consider almost all forms of serous pleurisy as due to the action of the tubercle bacillus. In a series of post-mortem cases analyzed by Osler he found tubercles in the pleural membrane in about a third of the cases in which there was pleurisy. When the pleuritic effusion was of tubercular origin it was very likely to be sterile, although occasionally the tubercle bacilli were found in it. It should be borne in mind that the exudation might be either serous, sero-purulent, or purulent, and the process acute, subacute, or chronic, and that when a pleuritic effusion was sterile the presumption was that it was tubercular.

Many observers now believed that all pleurisies were due to new growths, but this view he did not accept.

Some forms, he believed, were due to the action of chemical poisons present in the blood. He thought the pleurisies sometimes associated with chronic Bright's disease were of this variety. He did not regard the pleurisy complicating either acute articular rheumatism or, less frequently, acute gout, as usually due to microbes, but considered it to be due to chemical poisons. This type was also found in various dyscrasiæ—*e. g*, certain cases of acute hæmophilia accompanied by pleurisy. These pleurisies were apparently the result of a peculiar susceptibility of the pleura to certain chemical substances circulating in the blood, or of a conservative attempt on the part of Nature to eliminate the poison through the pleura.

Pleurisies due to new growths were of two forms: (1) Those secondary to new growths somewhere else, and (2) those where the new growths were primary. The first class was of comparatively little importance, as the history rendered the nature of the trouble sufficiently clear. The second class was more important and was more common than was usually supposed. For instance, where endothelioma occurred the pleurisy partook more of the nature of an inflammatory process in its extent than of a new growth, and involved the pleura, as a rule, almost uniformly, and was associated with a very abundant effusion at first purely serous, but later on containing some fibrin and after a considerable time becoming sero-hæmorrhagic. In one case which he recalled the patient had been tapped more than twenty times. At first the fluid had been clear, but it had gradually become darker and had contained more blood. Post-mortem examination in such cases showed enormous thickening of the parietal and visceral pleura with nodular growths on the surface of the pleura, and these sometimes extended so as to involve the pleura of the other side and also the pericardium and peritonæum. The structure of the new growth was closely allied to that of carcinoma, containing long tubular spaces, very suggestive of lymph spaces, filled with very large flat cells and bounded by dense stroma. Recent embryological researches seemed to have demonstrated that serous membranes were really allied to mucous membranes and were covered by epithelium instead of endothelium.

Dr. **Erdman**, referring to the anatomy of the pleura, said that Gray and Holden stated that the pleura extended to the ninth rib on the right side and the tenth on the left side, and posteriorly as far as the twelfth rib. Treves, in his *Operative Surgery*, 1892, said that very rarely the pleura could be found as low as the twelfth rib, and that it was usually at the tenth. Holden had stated that when a foreign body, such as a bullet, was in the pleural cavity it could be extracted even by cutting below the lower border of the twelfth rib itself. As a rule, the lungs extended down as far as the eighth rib. The surgical landmarks with reference to operative procedures on the chest were taken usually from the lower border of the pectoralis major muscle, corresponding to the fifth rib, and from the first visible interdigitation of the serratus magnus from above, or about the sixth rib. Where there was a simple serous effusion, or in empyema following pneumonia where there was a tendency to go on to resolution, tapping was the proper operation. He recalled the case of a child of two years where thick greenish pus had been removed at two tappings from the pleural cavity, yet the child had recovered in fifteen days and had had no relapse. In cases of purulent effusion not directly traceable to the pneumococcus the operation should be either thoracotomy or this with excision of a portion of one or more ribs—called thoracoplasty, or Estlander's operation. Tapping was done from the sixth to the ninth space, and it was advisable not to go below the ninth space owing to the contiguity of the diaphragm to the chest wall. Thoracoplasty was done in those cases where the effusion was the result of a chronic process, where sinuses existed, or an abscess was pointing—in short, where the condition did not allow of proper expansion of the lung owing to the thickened and rigid pleura. The operation was usually done in the axillary region, and portions of from one to six ribs were exsected. According to Estlander, several transverse incisions were made along the median area of an intercostal space between two ribs; then these two ribs were excised, and this was to be repeated until enough had been removed. The speaker considered the vertical incision the best. It was made in the midaxillary line, the skin was drawn to the side, the muscles were retracted, and the ribs excised. The thickened pleura was then to be scraped and the curdy material removed. The after treatment was simply the usual dressing for an abscess cavity, washing out the cavity only in those cases in which there was a marked odor to the pus.

Dr. H. P. **Loomis** said he had recently examined a number of cases with reference to the line of Ellis and had found some difficulty in mapping out its anterior depression. This line, he believed, was very important as determining whether or not there was a consolidated lung underneath the fluid. To obtain this line, as he understood it, the lung must be normal and free from any adhesions binding it to the chest wall. This would certainly limit the number of cases to which this test could be applied, for out of 763 autopsies the speaker had found 276, or thirty-six per cent., with lungs bound down by organized adhesions, either general or local, to the chest wall. In all of these 276 cases the lungs had been free from disease except the pleuritic changes; consequently, if fluid had been effused in the pleural cavity of any of these cases, uniform compression of the lungs could not have taken place and the line would have been absent, although there was no disease of the lung itself. Following the Germans, it had been the fashion recently to say that the majority of pleurisies were tubercular, and some even went so far as to say that fully ninety per cent. were tubercular. This was certainly not the experience of observers in this country. Some years ago he had noted, out of a series of nine cases of pleurisy occurring independently of pneumonia or tuberculosis, only two which had been tubercular. Bowditch, of Boston, in a recent article had reviewed his cases of pleurisy for the past thirty years. About ninety cases had been followed up, and it had been found that only thirty-eight per cent. of the patients had died of phthisis. Twice at autopsy and once clinically the effect of pleurisy on the progress of phthisis had been impressed upon him. In the clinical case a man with advanced phthisis had developed pleurisy with effusion, and at once the advance of the tubercular process had been arrested, and for six months the man had gone about attending to his business and enjoying good health, although his chest cavity had been two thirds full of serum. With the idea of getting rid of this fluid, a needle had been introduced and most of the fluid had been withdrawn. From the time he had been tapped the phthisis had progressed very rapidly and he had finally died. In another case seen at autopsy the lung had showed a well marked tuberculosis, and the chest had been filled with fluid. From an examination, it had been evident that the tubercular process had been stopped for quite a while, so that the question arose, Might not pleurisy in phthisis be a conservative process?

Dr. R. J. Carlisle said he had been much interested in Dr. Le Fevre's experiment, yet he thought it would not have much clinical value, because, until the fluid was sufficiently abundant to raise the lung to a high level, it would be difficult to make out the line of the fluid; it could not be made out by percussion except in the axillary line. He understood Dr. Le Fevre to say that if we found the line of flatness in the axillary line, it meant considerable fluid.

Dr. F. M. Crandall said he had been interested in Dr. Loomis's remarks about pleurisy and phthisis, for his only case of tapping of the chest which had done badly had been just such a case. The patient had been in fair condition up to the time of the tapping, but he had died in forty-eight hours after the operation. He had seen several cases which illustrated well the natural history of empyema in children. In three, operation was refused, and spontaneous opening had occurred in each at the end of about twenty-one weeks. In these cases there had seemed to be no tendency to cure. This was probably explained by the very late occurrence of the spontaneous opening and the many pathological changes which had occurred before this time. Of these three patients, one had died two or three months after the opening of broncho-pneumonia, probably tubercular; the second one had gone on for three months after the opening, and had finally consented to resection of the rib and curetting, which had resulted in a permanent cure; the third had dragged out a miserable existence for two years, and had finally died of tuberculosis.

For practical purposes, empyema might always be considered secondary. The younger the child, the more complicated the condition. There was usually a certain amount of pneumonia and bronchitis associated with the empyema, and the signs of these conditions obscured the empyema. Bronchial respiration was almost always heard. When this was audible from the top to the bottom of the chest, it was a good sign of fluid. Percussion was sometimes misleading, for over the condensed lung there was often tympanitic resonance. When over the area where fine râles had been heard from day to day the respiratory signs became absent, it was very significant of fluid.

Dr. J. M. Byron said that a number of years ago he had had an opportunity of making some experiments with dried and recent tubercular sputum in guinea pigs, and he had found that those inoculated with the dried sputum would resist a great deal longer the action of the tubercle bacilli than those inoculated with fresh sputum. He had thought that the retraction of the lung caused by the pressure of the fluid in the cavity might explain this, and experiments which he had made in this direction had been published about seven years ago. Each organ had two modes of activity—functional and metabolic. If only metabolic activity of the organ were affected, it would simply be deprived of a portion of its nutriment; if its function were impaired, its restoration could be aided by diminishing the functional activity. Thus, in the early stages of tubercular joint disease, immobilization would stop the process; in other words, by depriving it of its functional activity, its metabolism had been increased. In this way we simply aided Nature to do what she would do if she could. Similarly an effusion into the pleural cavity might, by restraining its functional activity, increase the amount of nutriment sent to that organ, and so aid materially in arresting the tubercular process.

He agreed to the classification given by Dr. Biggs, except as regarded considering every effusion as pleuritic. Our medical nomenclature was much confused. The cases of endothelioma of the pleura he did not consider true pleurisy any more than he considered the proliferation of pus corpuscles in the pleural cavity produced by the presence of actinomyces a pleuritis. Five or six years ago he had presented to the society a remarkable case of resection of the ribs in a boy who had apparently had a primary purulent pleurisy. An incision had been first made, but, as the empyema had continued, portions of eight ribs had been excised, the periosteum being left. The boy was still living.

Dr. J. E. Winters said, with reference to the natural history of empyema, that the remarks of Dr. Crandall gave a clear idea of what should be the treatment of a case which had opened spontaneously or was about to do so. In every such case a counter-opening should be made posteriorly at the point where the opening was ordinarily made when there was no spontaneous opening. In cases of empyema where the opening had taken place internally into a bronchus the same treatment was demanded, for, although a number of cases of recovery had been reported where an internal opening had occurred, the majority of these had ended in tuberculosis. It seemed to him that most of the empyemas met with in children occurred in connection with or immediately following pneumonia, and if allowed to run their natural course they would end as already stated. A few years ago he had thought that he was going to have two recoveries after aspiration in empyema; however, one of the patients had eventually died of tubercular meningitis, and the other now apparently had phthisis. The results of operation for empyema in children were so satisfactory that it seemed to him useless to adopt any other treatment than a free external opening. A good result almost invariably followed simple incision without excision of a rib. One of the reasons for failure to get complete recovery after simple incision and drainage was that the incision was not made sufficiently free; it should be at least two inches long and should not be made too low down when the diaphragm was much depressed. The temptation was to open at the lowest point, but it seemed to him that the opening should always be at the same point, regardless of the depression of the diaphragm. If the incision was made too low, after retraction of the chest wall had begun, there would be a temporary retraction of the diaphragm, and this would cause occlusion of the opening and defective drainage. The incision should be made just above the level of the normal percussion resonance on the sound side. After making a free incision care should be taken to completely empty the abscess, and, if the patient's condition admitted of it, he firmly believed that the pleural cavity should be washed out, the consensus of opinion to the contrary notwithstanding. Nearly always there were large collections of fibrinous pieces which could not be removed except by free incision aided by flushing of the cavity. Complete recovery could not occur unless such irrigation was done. After once thoroughly flushing the cavity it was scarcely ever necessary to repeat the irrigation. It seemed to him that Estlander's operation was only applicable to neglected cases of empyema or where there was great rigidity of the chest walls or a thoracic fistula. He had operated altogether over sixty times by the method just described, in every instance without excision of a rib, and all the patients had recovered notwithstanding that many of them had been dispensary patients with bad surroundings.

Dr. Winters then exhibited several of the patients on whom he had operated for empyema.

Dr. Le Fevre said that the demonstration he had made was not original with him, but had first been brought before the profession by Garland, of Boston, in his work on *Pneumonodynamics.* If we found the curved lines of Ellis, it showed that the lung was normal in elasticity or retractile power; if, on the other hand, at an early stage this line did not follow that curve, we knew the retractile power of the lung had been impaired, and this pointed to tubercular infiltration, emphysema, or adhesions of the lung to the chest wall. Again, the point of greatest distention and elasticity in the lung was in the lower portion in the axillary line. Garland's experiment of injecting cacao butter into the pleural cavity of a dog showed that quite early the line of dullness appeared in the lower axillary region; hence this zone of flatness was an early diagnostic point. This zone had been mistaken for an enlarged spleen.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Meeting of January 23, 1894.

The Opium Disease in Infants and Children.—This was the subject of a paper by Dr. Louis Fischer, who expressed the belief that the disease was much commoner than was generally supposed; some cases diagnosticated as marasmus or as summer diarrhœa were really cases of opium poisoning. Ignorant mothers and monthly nurses were generally responsible for the administration of the drug. One mother had bought opium of a Chinaman and given it to her child in half-grain doses. Another had administered as much as six tablespoonfuls of paregoric at a dose. The liability of children born of opium-eaters to die of collapse if the drug was withheld after birth was commented upon. The symptomatology included diarrhœa, sometimes alternating with constipation, loss of appetite, irritability, restlessness, sleeplessness, almost constant stupor, itching, as indicated by scratch marks, rapidity of the heart's action, decided sweating, scantiness of the urine, which was sometimes albuminous, and occasional vomiting—all this without fever. Besides sulphonal, which seemed to hold the first place in the treatment, brominated camphor, lupulin, chloral, and potassium bromide had been found useful. It was greatly to be deprecated that paregoric could be bought so readily without a prescription and without labels to indicate the doses proper for children of various ages.

Puerperal Sepsis; its Prophylaxis and Treatment.—Dr. Robert A. Murray read a paper with this title. Antisepsis during labor, he said, was believed to be as necessary as in surgery. Three antiseptics could be managed easily—corrosive sublimate, carbolic acid, and creolin. The prophylaxis should begin with a bath and a change of clothing. The vulva especially should be cleansed carefully. A new rubber cloth should be spread over a clean sheet, and over the rubber there should be a draw-sheet. The importance of an enema should not be forgotten. A vaginal injection of a 1-to-3,000 solution of corrosive sublimate or of a two-per-cent. solution of creolin should be given before labor, but usually not after it. Creolin was to be preferred to corrosive sublimate, because it was something of a lubricant, while corrosive sublimate was distinctly astringent, and so facilitated laceration. An antiseptic pad and napkin should then be applied, and never removed except for examination, which should not be more frequent than was actually necessary. The physician's hands should be scrubbed thoroughly and immersed in a 1-to-2,000 solution of corrosive sublimate or a two-per-cent. solution of creolin. The antiseptic pad should be applied again after the birth of the child and before the expulsion of the placenta. Retained membranes and pieces of placenta should be removed at once by the aseptic hand, and then an intra-uterine douche should be given. Fluid extract of ergot, in half-drachm or drachm doses, was to be recommended in the majority of cases. After urination an antiseptic solution should be applied. When there was a bad odor to the discharge a vaginal douche was to be ordered, but if the examining finger showed that the foul discharge came from the uterus, it must be thoroughly curetted and a single intra-uterine douche given. In prolonged cases instruments were to be employed. The nurse should never be allowed to examine a patient. In case of sepsis, the same general plan of antisepsis should be followed, but the vagina ought to be inspected so that diphtheritic membrane might not be carried into the uterus.

Book Notices.

Dissections Illustrated. A Graphic Handbook for Students of Human Anatomy. By C. Gordon Brodie, F. R. C. S., Senior Demonstrator of Anatomy, Middlesex Hospital Medical School, etc. With Plates drawn and lithographed by Percy Highley. In Four Parts. Part I. The Upper Limb. With Seventeen Colored Plates, two thirds natural size. Pp. iv-34. Part II. The Lower Limb. With Twenty Colored Plates, two thirds natural size, and Six Diagrams. Pp. 36-74. London and New York: Whittaker & Co., 1894. [Price, $4.50.]

This is an admirable series of lithographic plates for use at the dissecting table, accompanied by a small amount of explanatory text. The structures are represented as of three fourths the natural size, but yet the book is not so large as to encumber the student. Each part should be bound separately in enameled cloth, as is now the excellent custom for dissecting manuals. The work follows the usual plan of English works of this character in leaving the student without definite instructions for exposing the parts represented. Its value would be greatly enhanced if an introduction were furnished describing the necessary instruments and their care and use, and if under each dissection concise directions for its preparation were given. The French manuals, like that of Morel and Duval, are far superior in this respect to any existing English ones.

The diagrams appear to be by a different hand and are by no means as well drawn as the plates. The simplified form of the brachial plexus that accompanies Plate III could have been still further simplified to advantage had Rauber's method of the formation of three cords which interunite by anterior and posterior branches been followed. The ancient method of showing the cutaneous distribution of nerves by straggling filaments rather indefinitely distributed might have been superseded to advantage in so fine a work as this by diagrams like those of Heiberger indicating the cutaneous areas by distinct colors.

A System of Genito-urinary Diseases, Syphilology, and Dermatology. By Various Authors. Edited by Prince A. Morrow, A. M., M. D., Clinical Professor of Genito-urinary Diseases, formerly Lecturer on Dermatology in the University of the City of New York, etc. With Illustrations. In Three Volumes. Vol. II, Syphilology. New York: D. Appleton & Co., 1893. Pp. xvii–917.

The second volume of this already well-known work treats of syphilology in its entirety.

The collaborators have been selected with regard to their special fitness to deal with given subjects, and they have done their work conscientiously and well. The book opens with a chapter on the History, Geographical Distribution, Evolution, and General Pathological Anatomy of Syphilis, by Dr. J. N. Hyde. The writer does not believe in its prehistoric existence, but confines the disease, as we know it, to the period succeeding the fifteenth century, notwithstanding recent researches into Chinese history show the malady to have existed in that country long before that period. As to its geographical distribution, he says "the propagation of syphilitic disease respects, indeed, neither national boundaries, geographical divisions, nor the isothermal lines drawn across earth and sea." The ordinary meaning of the term "variant," used on page 37, would indicate that the author believed syphilis, leprosy, sarcoma, epithelioma, etc., to be instances of normal histogenesis. He certainly meant variations.

The Ætiology of Syphilis is treated of by Dr. John A. Fordyce in a forcible and thorough manner. He concludes that, notwithstsnding "many important conditions are necessary to prove that syphilis is caused by the bacillus of Lustgarten," there are evidences sufficient to justify the conclusion that it must have some ætiological connection with the disease.

Under Modes of Infection in Syphilis, Dr. Bulkley gives expression to his belief in inoculation by conception from mother to child and *vice versa*, and also through the semen.

In the article on Constitutional Syphilis Dr. Zeissler describes as unusual prodromes painful swellings about the head and clavicle, effusions into the joints, enlargement of the spleen, hepatic icterus, and albuminuria. These conditions are certainly rare in the early stages of the disease, and seem to us rather evidences of precocious syphilis in which the secondary and tertiary lesions develop simultaneously. Gummata, periostitis, and nervous lesions have been seen to develop at the same time or even before the cutaneous manifestations. They are not prodromes, but distinct later lesions produced at this early period by the profound intoxication of the individual.

The writer states an important fact when he says that, under proper aseptic precautions, surgical wounds heal just as well in the syphilitic as in the non-syphilitic. Although in profound syphilitic cachexia this is not the case, it should be understood that here we have to deal with general deterioration of the system, and not with the influence of the specific virus. Nevertheless, the fact remains that syphilitic lesions themselves will not bear traumatism without suppuration, and wounds of the mucous membrane, which in the healthy would heal spontaneously, in the syphilitic suppurate, slough, and spread. This, as the author says, is no doubt due to the fact, pointed out by Neumann, that months after the disappearance of cutaneous manifestations there is still cell infiltration around the capillary blood-vessels, and irritation will stimulate these deposits into renewed activity.

To those who have seen Dr. Morrow's *Atlas of Syphilis and Skin Diseases* it is unnecessary to say anything of his article on Syphilodermata in the present work. The same conscientious care and original study are evinced throughout the chapter as in that work. If this volume had nothing else in it, that would be its sufficient *raison d'être*.

It would be a pleasure to notice each of the articles in this interesting volume, but lack of space forbids. That by Dr. W. R. Townsend on Syphilitic Affections of the Bones deserves special notice. When one comes in contact with these serious manifestations of hereditary syphilis, and realizes that many of them develop in children whose parents never knew they had the disease, or supposed they were cured of it, it makes us hesitate to assure any one with even a suspicious history of his fitness for marital relations. That the disease is curable we have no doubt, but to say when it is cured is most difficult.

Under the head of Syphilis of the Genito-urinary System Dr. Fuller gives a most interesting account of syphilis of the kidney. This appeals particularly to the general practitioner, who is more apt to be consulted concerning the symptoms of this disorder than the specialist.

Dr. Armstrong gives an exhaustive paper on Syphilis in Relation to Public Health. After a careful analysis of extensive statistics he concludes that the disease is not increasing in the United States, and that the only feasible plan for limiting it is for the hospitals to open their doors for the free treatment of all infected persons, and thus make it possible for those to be cured who are most apt to disseminate the disease.

Considering the number of writers for this volume, there is remarkably little repetition in it. No doubt this is due to the watchful care of Dr. Morrow, whose editorial work upon the book deserves the highest commendation.

The mechanical work upon this volume is a specimen of the highest type of the printer's art. The plates are numerous and embrace some made by new processes which promise radical departures in illustrating medical subjects requiring two or three colors.

As a whole, the work deserves the highest praise, and any one possessing it may be assured that he has the most and best of what is known about syphilis.

A Practical Treatise on Materia Medica and Therapeutics. By Roberts Bartholow, M. A., M. D., LL. D., Professor of Materia Medica, General Therapeutics, and Hygiene in the Jefferson Medical College of Philadelphia, etc. Eighth Edition, revised and enlarged. New York: D. Appleton and Company, 1893. Pp. xxvii–820. [Price, $5.]

The first edition of Dr. Bartholow's work on *Materia Medica* appeared in 1876, and since that time the great favor with which it has been received by the medical profession, together with a desire that it should keep pace with advances in pharmacology and therapeutics, has led to the production of seven revised editions. The last edition conforms to the recent revision of the *Pharmacopœia*, and also contains matter upon the more recent drugs which, while not official, are yet in daily use and, many of them, of considerable importance.

The wisdom of introducing these non-official drugs we think must be self-evident, for, though a book of this kind must be based upon our official standard, the *Pharmacopœia*, yet, as the author says, the necessarily great conservatism of the latter is not required of the former, especially in the consideration of the newer drugs which have come into such extended use and upon which information is so important. The character of the book remains, as always, one of careful arrangement and much completeness, and the work is of the greatest practical importance and usefulness. Indices, both clinical and remedial, are added, as well as tables of metric equivalents.

A Text-book of Physiology. By M. Foster, M. A., M. D., LL. D., F. R. S., Professor of Physiology in the University of Cambridge, etc. With Illustrations. Sixth Edition. Part I, comprising Book I. Blood. The Tissues of Movement. The Vascular Mechanism. New York and London: Macmillan & Co., 1893. Pp. 387. [Price, $2.60.]

It is but a short time since we noticed the final part of the fifth edition of this work, and even then the author was preparing for the sixth edition. There are few changes in this edition except in the chapter on the vascular mechanism, in which the author has introduced descriptions of Hürthle's membrane manometer, of Roy's and Adams's cardiometer, and of Stolnikow's method of determining the quantity of blood ejected by the right ventricle. Attention is called to the facts not only that the quantity of blood ejected at the systole may vary from time to time, but also that at times, if not normally, the whole of the blood present in the ventricle at the systole may fail to leave the ventricle during the systole, so that the ventricle is incompletely emptied. Again, the ventricle may discharge its contents in the earlier part of the systole and remain contracted for some little time after it has emptied itself. Some other minor facts similar to these constitute the only additions.

BOOKS, ETC., RECEIVED.

The National Dispensatory. Containing the Natural History, Chemistry, Pharmacy, Actions, and Uses of Medicine, including those recognized in the Pharmacopœias of the United States, Great Britain, and Germany, with Numerous References to the French Codex. By Alfred Stillé, M. D., LL. D., Professor Emeritus of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania; John M. Maisch, Phar. D., late Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy; Charles Caspari, Jr., Ph. G., Professor of Theoretical and Practical Pharmacy in the Maryland College of Pharmacy; and Henry C. C. Maisch, Ph. G., Ph. D. Fifth Edition, enlarged and revised in accordance with the Seventh Decennial Revision of the United States Pharmacopœia. With Three Hundred and Twenty Illustrations. Philadelphia: Lea Brothers & Co., 1894. Pp. vi–1903. [Price, $7.25.]

Trephining in its Ancient and Modern Aspect. By John Fletcher Horne, M. D., D. Sc. (Hon.), F. R. C. S. Ed., Honorary Surgeon to the Barnsley Beckett Hospital, etc. London: John Bale & Sons, 1894. Pp. xi–133. [Price, 5*s*.]

The Modern Climatic Treatment of Invalids with Pulmonary Consumption in Southern California. By P. C. Remondino, M. D., Member of the American Medical Association, etc. Detroit, Mich.: George S. Davis, 1893. Pp. xi–126. [The *Physician's Leisure Library.*]

Bericht über die dreiundzwanzigste Versammlung der ophthalmologischen Gesellschaft. Heidelberg, 1893. Redigirt durch W. Hess und W. Zehender. Stuttgart: Ferdinand Enke, 1893. Pp. iv–258. [Ausserordentliches Beilageheft zu den *Klinischen Monatsblättern für Augenheilkunde.*]

Transactions of the Royal Academy of Medicine in Ireland. Vol. XI. Edited by William Thomson, M. A., F. R. C. S., General Secretary; Surgeon to the Richmond Hospital, Dublin. Dublin: Fannin & Co., 1893. Pp. xxxix–518.

State and Municipal Control of Infectious and Contagious Diseases. By John Winters Brannan, M. D. [Reprinted from the *Medical Record.*]

An as yet Undefined Fact in Pharmacology. By Dr. Heinrich Stern, New York. [Reprinted from the *Courier of Medicine.*]

Liquor Sedans, Saw Palmetto, Damiana, Pichi, and Stylosanthes Elatior. Their Uses in Nervous Diseases; their Medicolegal Relation. Epilogue. By John J. Caldwell, Baltimore. [Reprinted from the *Virginia Medical Monthly.*]

The Erectile Tissues. Their Physiology, Pathology, and Treatment. By J. J. Caldwell. [Reprinted from the *Charlotte Medical Journal.*]

The Annual Report of the Superintendent and Physician of Walnut Lodge Hospital, Hartford, Conn., at the Annual Meeting, January 3, 1894.

Twelfth Annual Report of the Hospital for Women and Children, Newark, N. J. December, 1893.

A Revision of the Adult Cestodes of Cattle, Sheep, and Allied Animals. Prepared under the direction of Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, by C. W. Styles, Ph. D., and Albert Hassall, M. R. C. V. S. Published by the authority of the Secretary of Agriculture. Washington, 1893. [Bulletin No. 4.]

State of New York. First Annual Report of the State Charities Aid Association to the State Commission in Lunacy, December 1, 1893. Printed from advance sheets of the Fifth Annual Report of the State Commission in Lunacy. Albany: James B. Lyon, State Printer, 1894.

Atlas of Clinical Medicine. By Byrom Bramwell, M. D., F. R. C. P. Edin., etc. Vol. II. Part III. Edinburgh: T. & A. Constable, 1893. Pp. 91 to 128.

Miscellany.

The Forcible Feeding of the Insane.—In the *British Medical Journal* for January 27th Dr. James Neil, of the Warneford Asylum, Oxford, recommends the following method:

"(*a*) The food must be liquid; custard of egg and milk is a very good and convenient food. But it is desirable, especially if the feeding has to be kept up for any length of time, to have some variety, and to introduce the vegetable element. We begin by giving a couple of eggs in a quart of new milk, morning and evening. For dinner about the middle of the day, a ration of meat pounded fine in a mortar, with two or three good-sized potatoes, and added, along with a couple of eggs and a cupful of cream, to the liquor in which the meat was boiled, the whole being made into a smooth *purée* with all solid particles strained off. If this last point is not attended to, the feeding tube will be choked, and an awkward interruption to the operation caused. It will be observed that all the elements of the meat are retained, which is not the case with ordinary beef tea. The potatoes should be cooked by steaming, or boiled in their skins, so that the vegetable salts are not lost. To each of these three meals a dose of cod-liver oil should be added, gradually increased to a tablespoonful. If symptoms of exhaustion are at all marked, from half an ounce to an ounce of brandy should also be added. If, after a week of this regimen, the body weight is still falling, another egg must be added to each meal.

"(*b*) The room in which the operation is performed must be well lighted. Place a mattress on the floor, in the full light of the window, and lay a pillow on the end of the mattress farthest from the window. Have a yard all around the mattress clear of furniture.

"(*c*) Instruments: 1. A feeding tube. It should be of flexible material, as thick as a smallish finger, and soft to the very tip. No part should be hard or rigid. An accident can hardly happen with such a tube. It is too large to enter the larynx, and too soft to perforate the stomach or œsophagus. It is best to have the cup for receiving the food made in one piece with the tube, and of the same material. 2. A screw gag of plated metal, thin at the tips, and serrated to prevent it from slipping off the teeth. 3. A small bottle of olive oil. 4. A counterpane folded double. A counterpane is better than a sheet, because, being thicker and softer, it lies more closely to the patient's body, and prevents movements more effectually. 5. A towel. 6. The food, in a jug with a handle and spout; not a basin. If a basin is used, much of the food will be spilled as it is being poured into the funnel.

"(*d*) To prepare the patient: Take off the boots, and loosen the clothing about the body and neck. In the case of a woman, direct the nurse to unfasten the stays and slacken the petticoats.

"(*e*) The operation: Four assistants are required—one at the head, one at the feet, and one at each side. The patient is made to stand on the mattress, near the window end, with his face to the light. The chief assistant stands close behind the patient, and puts his arms through the armpits of the latter. Those at the sides grasp the arms of the patient at the wrist with one hand, and at the elbow with the other. The assistant at the feet, standing at one side, puts his arms around the patient's ankles and snatches his feet from under him, while the others, especially the chief assistant, support the body and let the patient gently and quickly down on the mattress on his back, the feet being toward the window and the head on the pillow. The light must fall on the patient's face. The operator throws the doubled counterpane across the patient's body, covering him from the shoulders to the waist, the arms being under the counterpane and close to the sides. The chief assistant takes the head firmly between his knees, kneeling behind the patient, the back of whose head rests on the pillow. The second assistant kneels astride the patient's legs, and grasping the knees with his hands, presses them downward. Those at the sides kneel on the loose ends of the counterpane close to the patient's body, grasp the elbows with one hand and the wrists with the other through the counterpane, and press downward on the mattress. In this way the patient is completely controlled in a few seconds, and a prolonged struggle, causing terror and exhaustion, is impossible. The chief assistant tucks the towel under the chin to prevent the clothes being soiled.

"Here a caution must be given. The assistants must on no account kneel on the patient or grasp the bare wrists. That must be done through the counterpane or the sleeve of the coat or dress. The chief assistant who holds the head must not squeeze the ears between his knees. The need for these precautions will be evident when it is remembered how easily many of the insane are bruised.

"The operator now kneels at the right-hand side of the patient's head, and places the instruments and vessels on the floor at his own right hand. He oils the tube and lays it across the patient's chest, on the towel, to be ready. The oil should not be omitted, for, as has already been said, the œsophagus is in a dry condition, the secretion of mucus being in abeyance. Then he inserts the gag between the molars, and opens the mouth widely with the screw. If the patient clinches his jaws, there are, in most cases, irregularities or gaps between the teeth that will admit the gag, or the nostrils may be pinched between the finger and thumb, when the patient will probably open his mouth for a moment to breathe, or he may be surprised into speaking by asking him a question suddenly and sharply. If these means fail, we can generally slip the gag in gradually by keeping a steady moderate pressure with it for some time. When the mouth is well opened, the operator passes the gag to the chief assistant, who holds it in position with his right hand, taking care that it does not turn round, or slip forward out of the mouth. The operator then takes the oiled tube with his left hand near the cup end, and with his right about eight inches from the point. Introducing the point into the pharynx, he guides it gently down the gullet into the stomach. The stomach is known to be reached by the feeling of resistance ceasing, and by a puff of gas that comes through the tube with a slight gurgling sound. The ear should be inclined toward the tube to catch this indication. Occasionally the point hitches against the back of the pharynx, the tube doubles forward at its weakest part—where the eyes are pierced, namely—and, pressing against the larynx, causes violent dyspnœa. This is apt to happen when the head of the patient is too far extended, causing the cervical vertebræ to bulge forward. Withdraw the tube and direct the chief assistant to flex the head. Reintroduce the tube, and, with the right forefinger in the pharynx, guide the point into the œsophagus. Sometimes there is a spasmodic action of the gullet, and the tube is grasped by it. Hold the tube against the obstruction for a few seconds, when the spasm will relax and the tube will pass down. Then, holding the tube upright with the left hand, with the right pour the food into the cup as fast as it will go down. If the flow is checked, it is because the eyes of the tube are closely applied to the gastric mucous membrane and are thus blocked, or because the tube is doubled in the stomach. Withdraw the tube for a couple of inches, and the food will flow. In some cases there is much regurgitation of food, causing troublesome, or even alarming, symptoms of suffocation. Lay down the jug and suspend the administration of food by pinching the soft stem of the tube with the right forefinger and thumb till the regurgitation subsides, then go on again. It may be necessary to do this two or three times in the course of the operation. When all the food is given, withdraw the tube gently, keeping it, while doing so, toward the roof of the mouth to avoid tickling the epiglottis. The patient is then released. It is usual to allow him to lie for a short time to lessen the risk of vomiting, but that accident rarely occurs. The operation now described can easily be performed, when the assistants are expert, in four minutes and a half from the time the patient is placed standing on the mattress till the moment he is released. This is an important point in favor of the method, for, in the most favorable case, the mind and the muscles of the patient are held in a state of painful tension, and when there is exhaustion, regurgitation of food, and alarming symptoms of choking, forcible feeding is a disagreeable and anxious operation. It is almost as much so in fact as the giving of an anæsthetic, and the more quickly it can be performed the better."

The Use of Organic Extracts.—In the February number of the *Edinburgh Medical Journal* there is an article on this subject, by Dr. R. W. Felkin, in which we find the following passages:

"With regard to the way in which these organic extracts act, I am not prepared at the present time to offer any opinion, but it is evident, from what we know of the administration of thyreoid extracts in myxœdema, that they can act very powerfully. I believe also that organs such as the ovaries and the testicles possess the power of elaborating an internal secretion, as it is termed by Brown-Séquard, which is perhaps not absolutely necessary, but, at any rate, of importance to the organism."

The author then gives brief notes of a number of cases of nervous disease in which he has used the extracts, and adds:

"I believe that I have hit upon a plan of treatment which will be of considerable use in a different class of cases. The cases I refer to are those of patients suffering from ovarian disease or other nervous disease connected with the genital system.

"Before mentioning any cases or referring more specially to the method of employing the orchitic extract—for that is what I have used—I want to make a few very brief remarks as to how I came to take an interest in this matter.

"I think that it is quite possible sometimes to obtain hints as to treatment from primitive people. In 1879 I had the opportunity of becoming acquainted with many of the habits and customs of Central African natives, and also of conversing with Easterns of various races. It might be interesting, but I doubt if it would be profitable, were I to detail the exact practices which I met with. It is sufficient to say that on various occasions I found that human semen was administered to debilitated patients with wonderful success.

"Naturally this made some impression upon me. I also found that the natives were in the habit of devouring the raw testicles of animals, owing to their supposed strengthening properties; and still further, that during the slave wars it was the custom for both Arabs and natives to perform the most disgusting acts of cannibalism with a view to obtaining increased prowess.

"Knowing this, it has occurred to me that Brown-Séquard is quite right in stating that the internal organs do not only elaborate a fluid for excretion, but also a product which is necessary for the mental and physical well-being of the individual. From this I have been led to imagine, first, that the ovary elaborates a product which is necessary for the well-being of the woman; and, secondly, that the orchitic fluid is not solely intended to fertilize the female, but that it also contains a substance which, although not necessary, is beneficial. It may be that it allays the orgasm in the female among other uses.

"If these ideas be true, they explain certain diseased or morbid states which one meets with in practice, and they also, I think, give a hint as to how we may deal with such unhappy cases when we do meet with them. Certain experiments which I have been able to make seem to show that I am right, and I mention them because I am anxious that my ideas should have a more extended trial than it is possible for me to give them. I have no hospital ward in which to make experiments, and in dispensary work one does not meet with such cases very frequently, and one needs to have a very large practice to gain sufficient scope for setting the matter at rest in the only practicable way—namely, by trial.

"The first class of cases to which I will refer for a moment is that in which the ovaries have been removed. Now, this operation is performed for two reasons—either because the ovaries or tubes are themselves diseased or because it is hoped to cure hysteria or some other such-like nervous condition. To take the latter cause first. As far as I am able to read, the operation does not appear to be very successful, and even in the most successful hands the patient is exposed to a risk. Now, I fancy that were either cerebral extract or orchitic extract administered, in a considerable number of these cases cure would result; and in two cases, one of which was grave hysteria, the other mental instability and nymphomania, I have, I believe, been successful in inducing a cure. In both cases orchitic suppositories were employed. In another case of a somewhat similar character—namely, where in commencing puberty in a girl aged seventeen, a delicate, anæmic, highly excitable girl, the onset of the menstrual function was accompanied by intense excitability and loss of self-control, which almost rendered restraint in an asylum necessary—cerebral extract acted very beneficially.

"In those cases where the ovaries have been removed for disease certain evils may ensue. For my purpose I need only mention grave melancholia and hyperchondriasis. I think that the administration of an organic extract may be of considerable service. At any rate, in one case at the beginning of this year, in which a patient who had had her ovaries removed suffered from severe melancholia, it was successful; and in another case which I attended more recently the results were somewhat curious. A. P., aged twenty-two, came to me suffering from depression, accompanied by thoughts of suicide and an alteration in her voice. She had been to various throat specialists on this account and had been told by her employer that she must give up her position unless she was soon cured. Her ovaries had been removed eighteen months ago. She recovered well from the operation and went on satisfactorily for more than a year, and it was only at the beginning of this year that her trouble commenced. I hardly thought I should be able to do any good in this case, but it was a chance not to be missed. She took a month's holiday. I put her upon large doses of cerebral extract, which she seemed to appreciate; at any rate, she gained weight—rather more than a stone in a month; she lost all her gloomy fears and her voice has returned to its former pitch."

Should Physicians Charge Each Other for Medical Services?—"In view of the almost universal custom of physicians, as well as of the tradition of the profession, the question," says the *Medical News*, "would seem to be almost insulting. Nevertheless, there are a number of physicians who would answer the question affirmatively, and others who would not say No with quite the emphasis to be expected. The question was lately asked of a prominent and highly respected physician, and his answer was that, while no honorable physician, without demand, would name a charge or send a bill to a brother physician, it is growing more and more customary for the recipient of the service to demand the bill. There is, perhaps, something to be said upon this side of the question. In default of a money payment, the grateful patient will naturally make his physician some gift, but he finds it difficult to select a suitable present; it makes him, apparently, a useless trouble, and he keeps thinking that his physician might as well take the money and spend it more to his own liking. In obstetric cases, in prolonged illness, or other work wearying or expensive, whether to life or pocketbook, certainly no physician would permit his benefactor to go without some more substantial reward than the most sincere gratitude. The result of the tendency to put the service on a financial basis would, however, lead easily to abuse, and would likely soon destroy that largeness and lovableness of spirit, that mutual helpfulness and *esprit de corps* that has been one of the most delightful and enheartening characteristics of the medical guild. Such a cloud over the medical landscape would give it a very different tone from what it has heretofore shown, and, we are happy to say, which it still exhibits. Nothing so robs a man of respect, nothing sooner surrounds him with an atmosphere of concealed contempt, nothing more speedily deprives him of professional skill or usefulness, than the basing of every act on the hidden thought of 'How much money can I get out of it?' A surgeon once performed an operation on a physician's wife, and took occasion during convalescence to ridicule the offering of a small gratuity sent him for a similar service by another physician, as well as otherwise hinting the money value of his work, and this despite the history of many 'reference cases' from the lady's husband to the surgeon. However large the fee got by such means, it was, as we all know, stupidly poor policy and worse principle. The very air about such a man shrinks from him."

The Life-insurance Agent and the Doctor.—The following verses, by Dr. Henry S. Durand, of Rochester, were read at the recent annual dinner of the Medical Society of the State of New York:

Father Time he plays the fife
For this march of modern life
With a quickstep, and the hustler is our proctor;
And amid the jostling throng
Which is hurrying along
Go the life-insurance agent and the doctor.

The life-insurance agent
Declares that life's a pageant,
And reminds us that its ways are growing rougher;
And with motives all most pure
He entreats us to insure,
That when we die our families may not suffer.

He buttonholes the youth,
And, with looks of earnest truth,
He talks from early morn until the gloaming;
Till he makes him quite agree
That a Tontine policy
Is better than a gold mine in Wyoming.

He shows him 'tis an error
To feel for death a terror,
Since insurance makes its cup as sweet as honey;
One may die without chagrin,
Or live for years and win—
Whichever you may choose, you get your money!

He corners aged men
Nearly threescore years and ten,
And when their waistcoat button he has pressed
For half a day or more,
He leads them to the door
Of the doctor, for the doctor does the rest.

But when he gets them there
Is his visage free from care?
No, it's anxious, though he strives to make it placid;
For most truly does he know
That his man must undergo
The crucial test of heat and nitric acid.

He knows that clouds may rise
On most propitious skies—
Those fleecy clouds the doctor calls albumen;
He knows the stethoscope
May quickly dash his hope
By the murmurs which may whisper through its lumen.

Sometimes the doctor's lazy,
And, though the glass be hazy,
He sees it not; nor will he time devote
To seek for an impediment
Among the scanty sediment
Nor scan the test-tube held against his coat.

His stethoscope is pressed
On a chest that's fully dressed,
Of what he hears he has not e'en a notion;
And so the man is passed,
Though his kidneys have lost cast
And his heart may murmur like the summer ocean.

And yet what does it matter
If invalids they flatter
And make them half believe that they are healthy?
The doctor gets a V,
The man a policy,
And the agent—well, the company is wealthy.

And when the man is dead,
And o'er his honored head
A stone is raised with epitaph upon it—
His widow's sable weeds,
By the underwriter's deeds,
May change to blossoms on an Easter bonnet.

The Congress of American Physicians and Surgeons.—The officers of the congress, which is to be held in Washington on May 29th, 30th, and 31st and June 1st, are as follows: President, Dr. Alfred L. Loomis of New York; vice-presidents, *ex officio*, the president of the American Ophthalmological Society, Dr. George C. Harlan, of Philadelphia, the president of the American Otological Society, Dr. Gorham Bacon, of New York, the president of the American Neurological Association, Dr. B. Sachs, of New York, the president of the American Gynæcological Society, Dr. William T. Lusk, of New York, the president of the American Dermatological Association, Dr. Robert B. Morison, of Baltimore, the president of the American Laryngological Association, Dr. D. Bryson Delavan, of New York, the president of the American Climatological Association, Dr. Andrew H. Smith, of New York, the president of the Association of American Physicians, Dr. Reginald H. Fitz, of Boston, the president of the American Association of Genito-urinary Surgeons, Dr. George Chismore, of San Francisco, the president of the American Orthopædic Association, Dr. A. M. Phelps, of New York, the president of the American Physiological Society, Dr. Henry P. Bowditch, of Boston, the president of the Association of American Anatomists, Dr. Harrison Allen, of Philadelphia, the president of the American Pædiatric Society, Dr. James H. Keating,* of Colorado Springs, the president of the American Surgical Association, Dr. J. Ewing Mears, of Philadelphia; chairman of the executive committee, Dr. Landon Carter Gray, of New York; treasurer, Dr. John S. Billings, of the army; secretary, Dr. William H. Carmalt, of New Haven.

The meetings of the congress will be held in Metzerott's Music Hall, corner of Twelfth and F Streets, N. W. The preliminary programme is as follows: *Tuesday, May 29th.*—3. P. M.: Congress opened by the chairman of the executive committee. From 3.30 to 5 P. M.: General session of the congress under the direction of the Association of American Anatomists. *Wednesday, May 30th.*—From 2 to 3.30 P. M.: General session of the congress under the direction of the American Climatological Association. From 3.30 to 5 P. M.: General session of the congress under the direction of the American Dermatological Association. 7 P. M.: Dinner to the guests of the congress at the Arlington Hotel. *Thursday, May 31st.*—From 2 to 3.30 P. M.: General session of the congress under the direction of the American Association of Genito-urinary Surgeons. From 3.30 to 5 P. M.: General session of the congress under the direction of the American Gynæcological Society. 7.30 P. M.: Address by the president of the congress, Dr. Alfred L. Loomis, on The Influence of Animal Experimentation on Medical Science. To be followed by a reception. *Friday, June 1st.*—1.30 P. M.: Business meeting of the congress. From 2 to 3.30 P. M.: General session of the congress under the direction of the American Laryngological Association. From 3.30 to 5 P. M.: General session of the congress under the direction of the American Neurological Association.

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* Deceased.

Subjects for Discussion.—By the Association of American Anatomists: Morphology as a Factor in the Study of Disease. Opened with a paper by Dr. Harrison Allen, and discussed by Dr. Thomas Dwight, Dr. Frederic H. Gerrish, Dr. Frank Baker, and Dr. Burt G. Wilder. By the American Climatological Association: Sewer Gas. The Bacteriology, by Dr. Alexander C. Abbott; As a Cause of Disease, by Dr. Abraham Jacobi. By the American Dermatological Association: The Distribution and Control of Leprosy in the United States. The Distribution. Opened with a paper by Dr. J. Nevins Hyde, and discussed by Dr. W. A. Hardaway and Dr. James E. Graham; The Prophylaxis and Treatment, with a paper by Dr. J. C. White and discussed by Dr. George H. Fox, Surgeon-General W. C. Wyman, U. S. M. H. Service, and Dr. Joseph D. Bryant. By the American Association of Genito-urinary Surgeons: Nephritis in its Surgical Aspects. Opened with a paper by Dr. Edward L. Keyes, of New York, followed by a paper by Dr. George M. Sternberg, Surgeon General of the United States Army, on The Bacteriology of Nephritis, and discussed by Dr. George Chismore, of San Francisco, Dr. L. Bolton Bangs, of New York, Dr. Francis S. Watson, of Boston, and Dr. W. N. Wishard, of Indianapolis. By the American Gynæcological Society: The Conservative Surgery of the Female Pelvic Organs. Papers will be read by Dr. W. M. Polk and Dr. W. Goodell. By the American Laryngological Association: The Surgery of the Accessory Sinuses of the Nose. To be discussed by Dr. F. H. Bosworth, of New York, Dr. J. N. Mackenzie, of Baltimore, Dr. J. H. Bryan, of Washington, Dr. J. O. Roe, of Rochester, and others. By the American Neurological Association: The Influence of Infectious Processes on the Nervous System. Pathology and Ætiology, by Dr. J. J. Putnam, of Boston; The Relation to General Nervous Diseases, by Dr. E. C. Seguin, of New York; the Relation to Mental Disease, by Dr. Charles K. Mills, of Philadelphia; and The Therapeutics, by Dr. F. X. Dercum, of Philadelphia.

Hypnotics.—At a recent meeting of the Paris *Société de thérapeutique*, a report of which is published in *Le Mercredi médical* for January 31st, M. Bardet read a paper on the comparative value of hypnotics. The ideal hypnotic, he said, was one that would produce sleep without unpleasant accompaniments or consequences. After passing in review a class of hypnotics of which morphine was the type, and in which the hypnotic effect was doubled by an anæsthetic action, the author made a critical comparison of drugs which, like sulphonal, produced sleep without anæsthesia, somewhat analogous to that caused by alcohol, and had the advantage over chloral of not irritating the digestive organs. In this class of hypnotics he placed paraldehyde, which acted, he said, like alcohol, and this fact would perhaps explain the excellent results of its administration to persons addicted to alcohol. Methylal, in spite of the evanescence of its action, was greatly superior to chloral in that it caused no unpleasant feelings after sleep and had no irritative action. He advised its use more particularly with women and children. The last group of hypnotics considered by the author was chloral and its derivatives. These he classed as energetic hypnotics, but chloral, he said, had the drawback of giving rise to a disagreeable feeling of heaviness after sleep; moreover, it irritated the digestive canal and sometimes occasioned cutaneous erythema. The derivatives of chloral, such as chloralamide, chloralose, chloralantipyrine, etc., were free from this irritative action. By a minute study of these derivatives M. Bardet had been led to the conclusion that it was only the chloral in them that exerted the hypnotic action, and a powerful argument in support of this opinion was the fact that the chloralic compounds produced sleep only when they were given in sufficient quantity to contain an active dose of pure chloral. The volatile hypnotics, he added, were capable of producing rapid results without affecting the digestive canal.

M. Paul thought that M. Bardet's researches had been physiological rather than therapeutical. In order to be serviceable to the practitioner it would be necessary to study the action and indications of the individual hypnotics or the use of hypnotics in a given disease.

M. Huchard thought that there were two points to be considered in a discussion on hypnotics: 1. The physiological question, which had been treated brilliantly by M. Bardet. 2. The question of hypnotic medication, as M. Paul had suggested. Hypnotic medication might be carried out with a hypnotic drug or by counteracting the cause of the sleeplessness; it was in this way that a milk diet overcame the insomnia observed in connection with tonic dyspnœa in certain patients with heart disease, that the bromides put a stop to insomnia of nervous origin, and that codeine acted as a hypnotic by allaying cough. He did not altogether agree with M. Bardet as to chloral and its derivatives, for in persons affected with heart disease manifested by defective systolic energy, chloralose gave excellent results, while chloral was dangerous. In cases of aortic disease, in his opinion, morphine was the drug to be chosen. He called attention to a very interesting little fact which had been noted by Claude Bernard in his experiments on dogs, to the effect that sometimes, after an injection of morphine, a considerably heightened acuity of hearing occurred, so that the least sound might keep the patient from sleeping; he advised, therefore, that perfect silence should be maintained about a person to whom an injection of morphine had just been given.

The Toledo Medical College.—The secretary of the college, Dr. William J. Gillette, has sent us a copy of a letter written to him by the secretary of the Illinois State Board of Health, dated February 1, 1894. The letter is as follows:

"The committee on the administration of the Medical Practice Act submitted their report to the State Board of Health at its recent meeting held January 30th, recommending the recognition of the Toledo Medical College as in good standing before this board for the purpose of the medical practice act. The report was unanimously adopted and it was ordered that the secretary recognize the diplomas of said college as the basis upon which to issue the State certificates entitling to practice medicine and surgery."

Warm Fomentations of Corrosive Sublimate in the Treatment of Erysipelas.—The *Journal des praticiens* alludes to a recommendation of this method of treating erysipelas, by Labanowski, in the *Archives de médecine et de chirurgie militaires*, as being preferable to spraying. A compress wet with a 1-to-1,000 solution is to be applied to the affected part every hour. It is said that the pain is allayed almost immediately.

THE NEW YORK MEDICAL JOURNAL, March 3, 1894.

Lectures and Addresses.

SOME DEFECTS IN ANATOMICAL TEACHING IN THE MEDICAL SCHOOLS OF THE UNITED STATES.*

By JOHN B. ROBERTS, A. M., M. D.

It has been truly said that anatomy and physiology are the foundation upon which the whole structure of medical education is built, and that consequently these sciences must be taught with exhaustive thoroughness and made the permanent intellectual property of the student.

The best medical schools in this country, with their four years' graded course requisite for the medical degree, have now attained an excellence probably not inferior to any similar educational institutions in the world. There still exist here, however, numerous useless and low-grade medical schools, destined to be soon destroyed by the rapidly increasing number of State medical examining boards. In some of the former class of schools, and in nearly all of other grades, anatomical teaching has not reached the standard which the essential character of the subject demands. A consideration of the causes of this defective instruction and a search for efficient remedies seem appropriate. It is my hope that you who are present will discuss the statements of this address freely and fully, so that each of us may thereby find suggestions of value in elevating and improving the work done in our own schools and States.

It is a notorious fact that few of our students have any knowledge of biology when they begin the study of human anatomy. I know of but three schools in the United States (Johns Hopkins University, University of Michigan, and Hahnemann Medical College of Philadelphia) where a preliminary examination in elementary biology is required. Although an entrance examination in physics is enforced by many medical schools, there are others which admit without any such requirement. In those which submit students to this preliminary test the examination is probably confined to very elementary questions. Several of our very best schools still allow young men to begin the medical curriculum without any previous study of Latin. It is a little embarrassing to know that students entering homœopathic colleges are required by the American Institute of Homœopathy to possess a broader general education than is demanded of our students by the American Medical Association, the Association of American Medical Colleges, or our best medical schools. The preliminary educational requirements of the Hahnemann Medical College of Philadelphia include botany, chemistry, biology, physics, and Latin. Certainly not more than one or two of our schools include all of these topics in the entrance examination.

It is not difficult to appreciate the confused ideas of human anatomy obtained by a first-year pupil who knows little physics, less biology, and no Latin. What wonder that he fails to remember the names of the bones and muscles, and is filled with consternation when asked to mention an instance in the human body of a lever of the third class! He has no conception of the meaning of the descriptive Latin names of anatomical structures; wonders what is meant by "lever" and other mechanical terms; and is at a loss to know the significance of the terms "dorsal," "ventral," and "thoracic," and *iter e tertio ad quartum ventriculum.* Did not I, as a student, sit next a man who was unable to understand the function of certain laryngeal structures because the professor attributed to them a mysterious use called "phonation"?

Yet under our present system such students listen to lectures on osteology, syndesmology, and myology, and are expected to learn practical anatomy by dissecting the human body. To call such indecent butchery dissection is a farcical misnomer, as every demonstrator of anatomy knows. It would be much better to let these ill-trained hands learn the difference between muscle and fascia, nerve and vessel—which is about all such bungling teaches them—upon the dead bodies of the lower animals, and postpone dissection of human cadavers until the second or third year of the course.

Ebers has told in fiction of the Egyptian physician who, in the fourteenth century before Christ, ran the risk of condemnation by his heathen gods in order to obtain a human heart for studious dissection. You may remember his chagrin at finding his dearly bought prize so like that of the brutes he had often slaughtered in his quest for knowledge. Let the student of to-day begin his anatomical studies on the body of a dead cat, and he will learn much that will enable him to prosecute investigations in human anatomy with the ease of one to whom its fundamental principles are already known.

One of the most detrimental results of the acceptance of medical students without preliminary education is that they have had no educational training in using their eyes and hands. An hour's stay in any dissecting room will prove this point. Here is a man holding his forceps as if it were a pair of fire tongs—there, another making a fruitless attempt to put an edge on his scalpel. Few students can describe what they see, and still fewer can make the crudest diagram of their findings. In scientifically conducted anatomical laboratories pupils should be required to describe orally or in writing what they uncover, and should make drawings of the more important features. This method is adopted in non-medical schools and in the study of histology and pathology in some medical institutions. It is undoubtedly the true method of educating the mind, which is not a receptacle to be simply filled with statements thrown into it from the lips of teachers. That which enters by the ears may lead to culture; but Nasmyth, the Scotch engineer, spoke truly when he wrote, "The eyes and the fingers—the bare fingers—are the two principal inlets to sound practical instruction." Who doubts that the anatomical discoveries of Ruysch in the early part of the eighteenth century were due to his possessing "the hands of a fairy and the eye of a lynx"? A recent writer on education avers that only in Germany and such countries as neglect to educate the young by means of manual training do we find men of learning who can scarcely sharpen a pencil without cutting their fingers. My experience in post-graduate teaching convinces me that for this reason operative surgery is impossible for some very intelligent physicians.

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* The opening address by the executive president of the Section in Anatomy of the First Pan-American Medical Congress, September 5, 1893.

Manual training is valuable, moreover, because, as Felix Adler has said, hand culture brings brain culture. We need not only the worth and beauty of the object made, but also the psychological result brought by the effort for the utilitarian end. Physicians know that Seguin actually created intelligence in the idiotic brain by manual training, and that mental discipline must not be too much subordinated to mechanical accuracy. The medical growth of not a few capable minds has been dwarfed by modern instruments of clinical precision. The time has certainly come when the medical schools of the United States should insist upon a preliminary examination in elementary biology. A soon as this requirement can be extended to include as certain amount of laboratory work in biology, students will have sufficient deftness and manual dexterity, added to their preliminary knowledge of natural history, to fit them for intelligently studying descriptive and practical human anatomy.

As you probably know, the British five-year medical course is reduced to four years in a medical school, if the registered student has previously been graduated in arts or sciences at a recognized university requiring a year in physics, chemistry, and biology. If no such general education has been obtained, these subjects are studied during the early part of the professional curriculum, which is then of necessity five years in length. In France the preliminary education of one who aspires to become *docteur en médecine* must show evidence of his having had instruction in natural history, as well as in all topics of general education. Germany and Italy also require a preliminary knowledge of natural history, as probably do all the European nations, except Belgium. In Brazil and, I think, in the other Latin American countries a biological requirement is a necessary part of the preliminary education of those who purpose beginning medical studies.

A young man desirous of entering a medical school had much better wait a year, and devote that time to biology, chemistry, physics, and Latin, than to attempt to begin professional study without an elementary acquaintance with these subjects. The university extension courses will, in many sections of the country, give him the needed opportunity. If no such courses are accessible, a few books, even without a teacher, would answer the purpose.

If it is true that much unsuccessful anatomical teaching is due to the poor quality of the recipients, it is none the less demonstrable that a more extended influence for evil is exerted by the inferior mental qualifications of teachers and the unscientific methods of teaching permitted in some schools. This is, to a certain extent, the result of a custom that permits a professor, once appointed, to hold his position without forcible criticism until he dies or resigns, and prevents the faculty as a body influencing or regulating the manner or mode of instruction. The occupant of a professorial chair is practically an autocrat by courtesy.

Puschmann says that in the eighteenth century anatomical demonstrations on dissected bodies were frequent in many European universities, but that "in other places the neglect of anatomical demonstration was caused not so much by a scarcity of bodies as by the idleness and ignorance of the professors." Such a statement, it is to be feared, is not altogether inapplicable to the anatomical instruction now given in some quarters of the United States. Some men of great learning can not teach; the faculty of imparting knowledge is distinct from the faculty of acquiring knowledge. To teach is not simply to tell, but to make the fact stated so interesting and so clear that it assumes a living importance and is eagerly sought and intelligently retained by the hearer as a part of himself. A teacher must draw bold, clear outlines, omitting details and repeating essentials until his pupils have a mental framework upon which they themselves may erect more elaborate structures at a future time.

He who has not the power to select the essentials and lead the scholar to reason and observe is destitute of the teaching instinct. Then his lectures become mere recitations, as wearisome to himself as to his involuntary hearers. The true teacher furnishes his pupil with compass and chart; no more. The latter must select his route and reach his harbor by the exercise of those intellectual powers which have been given him. It is experience and not memory that has been called the mother of ideas.

Few teachers of to-day read their lectures on anatomy; but in some cases the lecture is still as lifeless as if read from manuscript or text-book, and destitute of either demonstration or true teaching. Didactic teaching can not be entirely relinquished, but it has little place in anatomy. Demonstration by specimen, dissected cadaver, blackboard diagram, and living model must be the chief reliance of the professor of anatomy who desires to hold the attention of his class and make anatomy what it is—one of the most interesting branches in the medical curriculum. Not many students will be absent from the lecture hour devoted to anatomy if they know that the statements read in their text-books are to be verified by electrical stimulation of the muscles on the nude model; that they are to see with their eyes and feel with their hands the difference between artery, vein, and nerve; that the teacher will create in colored crayon on the blackboard the diagram illustrating the relations of bone, muscle, and viscus; that the dissected cadaver will be studied in the standing posture; that the muscles of expression will be illustrated by photographs and etchings of public characters; that surface anatomy will become interesting because studied on reproductions of the famous works of ancient Greek art.

Muscular actions can only be taught effectively by voluntary use of the muscles of nude models, or by their involuntary contraction induced by the electrical current. Bones and other specimens in the hands of the instructors are of little value to the student seated twenty feet away. This distance effectually prohibits the latter from seeing the fissures, grooves, and foramina so learnedly mentioned by the teacher, who is perhaps simply reading for his own enlightenment the lettering printed on the bone. Even gigantic models in the hands of the teacher are less advantageous than duplicate specimens in the hands of the students during the time of instruction. Some teachers fail to appreciate that an elaborate picture, though valuable for reference by one who has known the anatomical region, is of little service to a student. The crudest diagram, made before the latter's eyes, conveys the idea and fixes it in his brain. A piece of chalk and a blackboard are imperatively demanded whenever and wherever anatomy is to be taught. Yet I recall the dissecting room of a well-known medical school which for years had no blackboard, no chalk, and no skeleton within its walls.

Occupants of chairs of anatomy not infrequently look upon their positions as temporary, and long for the occasion when they may be transferred to a department in which they feel more interest. Who does not know professors of anatomy that promptly became professors of surgery or obstetrics when the opportunity arose? One can as little expect such temporary anatomical chairs to be filled with enthusiastic and successful teachers as to find proper teaching of applied medical and surgical anatomy at the hands of physicians whose daily work is literature or life insurance. Again, it is not reasonable to expect those whose early education has been defective to be able to teach the mutual relations of anatomy to biology, mechanics, and psychology. The student needs a wide preliminary education in general knowledge; but the teacher of anatomy is helpless without it.

No criticism is too severe for the system that places first and second course medical students in one class room to hear the same didactic lectures on anatomy. Such a parody of instruction is probably unknown except in medical schools. To compel half of the class to hear what they can not possibly understand, to force the other half to listen to much that they have already learned, is recognized as idiocy by every one except the professional phonograph that each year repeats at a given hour the words which successive classes have received as teaching. Instruction that is not graded so as to lead step by step to higher knowledge is unworthy the name. It is impossible to compute the lost hours, undeveloped intellects, and disasters in medical practice due to this almost distinctively American folly. This undesirable method of teaching has been retained in the department of anatomy longer than in some other departments, because the important new facts to be taught in anatomy have been less numerous and conspicuous; therefore the whole subject can be pretty completely discussed in one session of lectures.

No method of instruction fulfills its mission if it does not develop the habit of independent investigation and work. Pupils need to be taught the manner of instituting and following out original inquiries and the use of the literature of a subject. Few colleges attempt to thus arouse the powers of observation and to sharpen the senses, for the prizes offered in some schools for a record of anomalies found in the dissecting room scarcely deserve consideration in this connection. Opportunities for original research in human anatomy are now given and such work is encouraged at the Harvard University Medical School, the College of Physicians and Surgeons of New York, and the Medical Department of Clark University at Worcester, Massachusetts. The last institution, however, confers no degrees in medicine and does not partake of the character of a school for undergraduates. Didactic instruction at the hands of teachers who never contribute a single new fact or thought to anatomical or medical literature is not calculated to encourage a spirit of scientific inquiry in students. The demonstrated usefulness to the scientific world of a teacher's original labor is a powerful stimulant to investigation and scientific rivalry among his pupils. The need of such opportunity and example is much felt in our schools.

In certain things we need to return to methods employed in the middle ages, but later overlooked or forgotten. In the beginning of the fifteenth century naked men were used to demonstrate anatomical facts, and it is possible that outline diagrams of the deeper structure were made on the bare skin. Experience with students has abundantly shown me that such "anatomical clinics" meet with great favor. To group in one lecture several nude models representing the effects of disease on anatomical landmarks is most valuable and essential in teaching and sustaining interest in clinical anatomy. "Clinical conferences," in which before his fellows the advanced student points out and demonstrates anatomical relations upon the living subject, develop a habit of thorough investigation of medical and surgical cases. Its subsequent value in diagnosis is easily appreciated.

This form of anatomical teaching is manifestly impossible to an instructor who has no practical knowledge of diseased conditions. The necessity for comparative anatomy, morphology, embryology, and anthropology in a perfectly arranged anatomical curriculum may require a portion of the instruction to be given by a biologist pure and simple; so long, however, as a medical school is to train medical practitioners, the demand for a physician or surgeon to teach medical, surgical, and artistic anatomy will be imperative. The school that provides an enthusiastic biologist for the one purpose and a practicing doctor for the other will best fill the hours devoted to anatomy in the college course.

The lengthening of the medical curriculum in all schools to compel attendance on four college courses would give time for laboratory work in embryology and comparative anatomy. Graduation should then be deferred until the age of twenty-two years, as is now done in one school (the Woman's Medical College of Pennsylvania).

The museums found in medical colleges lose much of their teaching value because the students have limited access to the specimens. Bones and dissected preparations, both wet and dry, of normal anatomy should be put into the student's hands for comparison with his own dissections and the text-book illustrations. In most cases the teacher alone handles the museum specimens. Wet preparations demonstrating normal regional anatomy are almost unknown in our college collections.

The work done by students in the anatomical rooms would be of a much higher grade if each member of the class was required to draw, even in crude outlines, the structures uncovered by his dissections, and under the guidance of an instructor to demonstrate his findings to his fellows. The necessity of preserving cadavers in this country by vascular injection with zinc chloride and similar decolorizing agents militates to a certain degree against fine work in our dissecting rooms. The adoption of the principle of cold storage by some schools (Bellevue Hospital Medical College, Chicago Medical College, Medical Department of Western Reserve University, and perhaps others) shows a way out of this dilemma.

Examinations in anatomy, which might be public, should be conducted at various periods of the course. Those in the early part ought to be restricted to osteology and similar elementary topics; but the later and more difficult examinations in regional, surgical, and artistic anatomy should be so conducted as to require the use of the earlier knowledge, and include demonstrations of surface anatomy and of dissections. A substitution of English terms for the Latin nomenclature still largely retained in anatomy would aid the average medical pupil to understand anatomical mechanics and remember the facts which he has presented to him. Much was gained in European schools when the mediæval practice of teaching medicine in debased Latin was relinquished. The professor who had to use the vernacular was compelled to be accurate in statement and clear in expression, and could no longer hide his ignorance in high-sounding Latin sentences imperfectly understood by his class.

The true solution of the educational problem in medicine is the discontinuance of the isolation existing between medical schools and schools whose object is general education and culture. Every medical college should be an integral part of a college or university, and should not be managed by men separated from the wholesome educational atmosphere which surrounds institutions devoted to learning in its broadest sense. The perpetuation and organization of isolated medical schools has been the cause of manifold defects in medical teaching, and has ended in making medical pedagogics an undeveloped science. The educational and educative friendships, even the hostilities, engendered by a combination of medical and academical schools, would bring about better preliminary qualifications in medical students and more advanced methods of teaching in professors. It is the school and the man in the corner, who never comes in contact with his superiors, that fails to improve his methods of work. The valuable courses preparatory to medicine now found in several universities would then become more numerous; and more youths, looking forward to a medical career, would begin their studies in such courses if the university and the medical college were everywhere combined. Thus the study of medicine would be a gradual development of the mind, and not a mere attempt to crowd technical facts in the memory—a process in violation of the first principles of education and one which makes many medical journeymen, but few medical masters.

Universities, academies, and all literary schools would be benefited by the association with medical colleges, for it would lead to even greater modification of the formerly rigid classical course by the development of the departments of natural science and languages. This change would meet with the approval of many thinkers, among others the Emperor of Germany, who has in recent years shown the value of youthful energy by insisting upon the necessity of modifying the strict and unyielding classical curriculum so long enforced by the German universities.

LECTURES ON THE

DIAGNOSIS OF ABDOMINAL TUMORS.

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LECTURE II.—NODULAR AND MASSIVE TUMORS OF THE STOMACH.

(*Concluded from page 198.*)

(*b*) TUMORS OF THE BODY OF THE STOMACH.—Tumors of the pyloric region often encroach extensively on the anterior wall of the stomach, but I have placed in this category three cases in which the tumor mass appeared to be more in the central part of the organ. In Case XIX the left epigastric region was occupied by a rounded, irregular tumor, and the patient had had marked gastric symptoms and had vomited blood. Though there was no question as to the nature of the growth, it is interesting to note that during his stay in hospital he gained six pounds in weight. In Case XX the tumor mass was more extensive and seemed to involve a large section of the anterior wall of the stomach, forming a very prominent and readily palpable tumor. In Case XXI a large nodular mass could be felt between the left costal margin and the navel. It was unusually firm, and post mortem showed that it occupied more than ten centimetres of the anterior wall of the stomach.

CASE XIX. *Large Tumor of the Body of the Stomach.*—Gustave P., a shoemaker, aged fifty-three years, admitted December 28, 1892, complaining of pain in the abdomen and back.

Parents died over eighty years of age; one sister died of cancer of the womb.

Patient was born in Germany; has been very healthy; has not been a heavy drinker; and denies lues.

The present illness he dates as far back as eight years ago, at which time he had dyspeptic symptoms, which persisted for two or three years; then he remained quite free from them for about three years, but early in 1890 they recurred. He has had uneasy sensations after meals, and belching, sometimes bringing up acid fluid. During the past summer he had a good deal of vomiting, and once in June brought up dark-brown fluid, which was said to be blood, and the next day the same material was noticed in the stools. His appetite is fair, but he is afraid to eat, and lately has only been taking liquids. He has not lost very much in weight—only about five pounds in the last six months.

Present Condition.—Patient is emaciated, pale, and a little sallow; mucous membranes distinctly anæmic. Tongue has a patchy coating and indented edges. Examination of the thoracic organs is negative.

The abdomen is symmetrical, a little depressed below the costal border; no peristalsis visible. On palpation, the left epigastric region is occupied by a superficial mass with a rounded, irregular, nodular surface. It extends sometimes almost to the middle line, and below crosses the transverse costal line. To the left it extends to the nipple line. It is a little painful on firm pressure; descends with inspiration. The pulsation of the aorta is transmitted through it. Percussion gives a flat tympany over the mass. Ewald's test breakfast, withdrawn fifty-five minutes after, yielded about seven hundred cubic centimetres of brownish fluid with a heavy sediment of undigested food; odor acid. The filtrate turned blue litmus red, congo red to blue, and yielded a rose-red color with phloroglucin vanillin. Uffelman's test negative. The urine was normal. The patient remained up and about the ward, and with a careful diet was made much more comfortable. The condition of the gastric juice was frequently tested; thus on January 4th Ewald's test breakfast, withdrawn an hour later, yielded about five hundred cubic centimetres of sour, yellowish food matter, which gave the reactions previously noted.

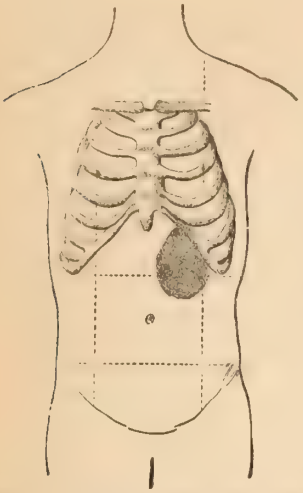

Fig. 16.—Outline of the tumor mass in Case XIX.

The patient continued to improve, gained in weight from a hundred and fourteen to a hundred and twenty pounds, and was in every way more comfortable. He had almost constantly, while in hospital, a little fever, temperature rising to 100°, sometimes to 101°, every day. No special change occurred in the position or condition of the tumor mass. He was discharged February 27th, and has not since been heard from.

Case XX. *Tumor of the Body of the Stomach.*—N. R., aged sixty-nine, shoemaker, German, came to this country in 1872. Admitted March 13th, complaining of loss of appetite, nausea, and vomiting.

Patient was sickly as a child. Six years ago he had a fever which kept him in bed for three weeks. He had been a moderate drinker; denies syphilis. Has not been a dyspeptic.

Present illness began before Christmas with pain after eating, nausea, and vomiting, the latter usually a short time after taking food. The appetite has failed and he has lost rapidly in weight. He has had much fullness and distress in the epigastric region, but no very sharp pain. Of late all these symptoms have become aggravated. He has never had vomiting of large quantities of food.

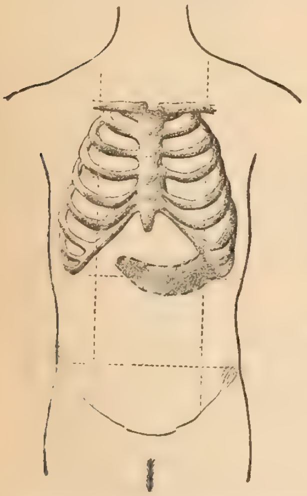

Fig. 17.—Area of the tumor mass in Case XX.

Present Condition.—Patient is a large man, still fairly well nourished. The lips and mucous membranes are pale; tongue has a thick white coat. Pulse is regular, 64, tension slightly increased the vessel wall sclerosed. Temperature is normal. Examination of the thoracic organs is negative.

The abdomen is symmetrical, except that there is a slight prominence at the end of the tenth rib on the left side; on palpation, soft, and nothing is felt until the epigastric region is reached. In the region indicated in the figure is a mass which moves freely in inspiration. The lower border is sharp like that of the liver or spleen; the surface is irregular and somewhat nodular. On percussion, there is a distinct tympany over the mass. On inflation, at there is no abnormal dilatation of the stomach.

Ewald's test breakfast given at 8 A. M.; at 9.30 a tube was inserted. There seemed to be some slight obstruction about the cardiac orifice, and about fifty cubic centimetres of coffee-colored fluid removed, together with a very little fresh blood. There was no free hydrochloric acid. Microscopically, it presented fresh blood-cells, blood pigment, and remnants of food. No enlargement of the lymph glands.

No material change took place within two weeks in the patient's condition; he was evidently failing, and he decided to go home.

Case XXI. *Tumor of the Pyloric Region and Anterior Wall; Perforation; Peritonitis.*—August B., aged fifty-eight years, farm laborer, German, admitted complaining of pain in the abdomen, loss of appetite, vomiting, and insomnia. Father died aged fifty-six, cause unknown; mother, of dropsy at sixty; one sister died of cancer of the stomach; no history of tuberculosis in the family.

Has always been a healthy man; the father of seven children. Has been a moderate drinker; denies venereal disease. Has always had good digestion; never suffered from dyspepsia.

His present illness began four weeks ago with pain in the abdomen and vomiting, which comes on very shortly after eating. He has never vomited any great quantities. Though he does not appear to have had any marked stomach symptoms, during the past six months he has lost in weight from a hundred and sixty-five to a hundred and thirty-five pounds. Patient is a medium-sized man, pale, thin, lips and mucous membranes pale, and he looks somewhat cachectic. Thorax is symmetrical; above the left clavicle one of the lymph glands is enlarged and hard. Examination of the lungs and heart negative.

The abdomen is full, particularly in the right epigastric region. Here, on palpation, a nodular mass can be felt midway between the costal margin and the navel. It is flat and extends transversely as far as two cubic centimetres beyond the median line. It is hard, a little painful, and descends with each inspiration. It is resonant on percussion. No peristalsis was felt, no changes in consistence, and no gas was felt to pass. The stomach tympany begins at the seventh rib in the left parasternal line and does not quite reach the navel. After inflation of the organ no peristalsis is seen.

Test breakfast was given and a tube inserted an hour afterward. The fluid obtained was dark-brownish, with a sour odor; contained organic acids, but no free hydrochloric. The blood count showed hæmoglobin forty-five per cent., and the red blood-corpuscles about four million.

The patient left the hospital and was readmitted April 12th, and the following notes were made: He is very emaciated and looks cachectic. There is a marked prominence in the epigastric region, just below the ensiform cartilage, and here very slight irregular movements may be seen. The indurated mass noted above appears to have increased in size. It lies at the junction of the umbilical and epigastric regions, and, on inspiration, descends almost to the navel. It is firm and resistant. There is no peristalsis visible after inflation of the stomach, and no change in the position of the tumor. Just above the navel in the linea alba there is to be seen a flattened prominence, which feels soft and like a little fatty tumor beneath the skin. Patient became progressively weaker and died June 4th.

Autopsy.—Peritoneal cavity contains nine hundred cubic centimetres of turbid fluid; fibrinous exudate covers the intestines. There is a large tumor mass to the left of the pylorus, involving the anterior wall of the stomach nearly to the cardiac end. Midway between the greater and lesser curves is an oval perforation, measuring seven by three millimetres, through which the contents of the stomach can be squeezed. On opening the stomach, there is a large ulcerated cancer extending laterally for ten centimetres. The stomach walls in the neighborhood of the ulcer are much infiltrated and are raised and in places overhang the ulcer. In the anterior wall there is the perforation already mentioned. The ulcer does not extend to the pyloric ring. The glands about the stomach and pancreas are enlarged. The head of the pancreas is also involved. There are small white tumor nodules on the surface of the omentum and mesentery.

Death from perforative peritonitis is a not very uncommon complication of cancer. Perforation may also take place externally. A more common communication is with the colon, which in all probability took place in Case XXIV. A rare perforation in cancer, which I do not see mentioned even in the exhaustive article of Professor Welch, is into the pericardium, which I found at autopsy in a case of the late Palmer Howard's, of Montreal. There was, of course, the most intense pericarditis, and the group of physical signs of pneumopericardium.

(*c*) Massive Tumors of the Stomach.—No cases are more difficult to recognize than those in which the walls of the stomach are extensively infiltrated. You might think that under these circumstances the diagnosis would be made with the greatest ease, but in reality they are cases which require no little care and study. Of the three cases which I shall narrate to you, in one the diagnosis was easy and definite; in one the tumor was so extensive, occupying such a large area in the left side of the abdomen, that some doubt existed as to whether it was not associated with the spleen or the kidney, while in the third there remains a doubt as to the exact nature of the growth.

Case XXII. *Cancer of the Stomach; Prominent Tumor in the Epigastric Region.*—H. P. C., aged fifty-seven years, admitted September 1, 1892, complaining of loss of appetite, progressive weakness, and irregular pains in the abdomen. Family history is good; parents lived to old age.

Patient since childhood has been healthy; appetite always good until about six years ago, when he began to have dyspepsia, occasional attacks of nausea and eructations, and sometimes vomiting. He appears at this time to have had considerable gastro-intestinal disturbance, as he had also diarrhœa, and became very weak and emaciated—quite as much so, he says, as he is at present—and the ankles were also swollen. The vomiting and nausea and diarrhœa stopped and he gained in weight, but his digestion for the past five years has not been as strong as before the illness six years ago. In June of this year he began to have feelings of oppression in the stomach, as though he had eaten a very full meal, but he had no vomiting; once or twice the food has been regurgitated. A marked symptom at first was inability to swallow after the second or third mouthful. With these local symptoms there has been loss of appetite and progressive emaciation. He has lost forty pounds since June. He has never had any severe pain; only a feeling of heaviness and distention after eating.

Condition on Admission.—Patient is a large, well-built man; face pale, and he looks depressed. There is marked emaciation. The pulse is of fair volume and the heart's action is strong. The temperature during the sixteen days he was under observation was always a little elevated toward evening, rising on several occasions to 102°. He had no cough; respirations quiet.

Abdomen flat, except in the epigastric region, in which it is a little prominent. On palpation, it is soft, painless, and just below the ensiform cartilage, extending across the whole upper zone, is a firm, resistant mass. Above, it extends to within two inches of the ensiform cartilage, and the lower margin was rather more than this distance from the navel. To the left it passed under the costal margin opposite the seventh and eighth cartilages. To the right it reached nearly, but not quite, to the costal margin. There was a distinct concavity above and a convexity below, and at no time was the mass below the level of a line joining the tips of the eleventh ribs. It was at times much more prominent than at others. On palpation, it was firm, gave an impression of solidity, was quite painless, of uniform resistance in all parts, and toward the left passed beneath the costal margin. To the right it terminated at a much higher position than is usual for the pyloric orifice. No movements were noticed in it, but the hand placed upon it occasionally felt distinct gurgling. Everywhere over it there was, on percussion, modified resonance. There were no nodules.

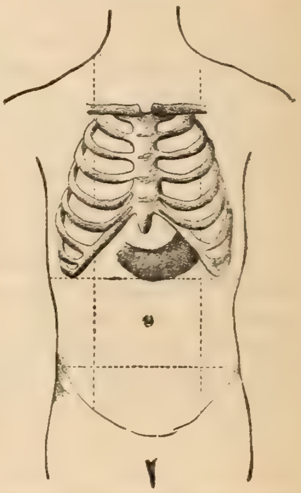
Fig. 18.—Area of the tumor in Case XXII.

At no time during the patient's stay in the hospital was there vomiting, nor could it be said there was marked distaste for food. At first he took an ordinary diet, but, finding that it gave a good deal of distress, it was replaced by a liquid diet of egg albumin and milk, which agreed very well. Mentally he was very despondent.

Bismuth and soda were at first given an hour or so after eating, and they relieved promptly the sense of oppression. It was not thought worth while to distress him with attempts at lavage or test breakfasts. Patient left the hospital unimproved on the 19th.

Patient died September 28, 1892.

Case XXIII.—*Unusually Large Cancer of the Stomach.*—Mrs. L., aged about fifty years, seen September 12, 1892. The patient has been a high-strung, nervous woman, and has not been in her usual health for the past two years, complaining chiefly of weakness and ill-defined nervous symptoms. I saw her a year ago for these symptoms, and at that time made an examination of the abdomen, which was negative. In June she was seen by a physician, who tells me that there was a lump on the left side which he thought was a floating kidney.

During the early summer she was under the care of a New York quack, who put her upon meat diet and hot water, under which treatment she appeared to improve. She went north to a watering place, and, though growing weaker and losing rapidly in weight, she kept up until August, when, on account of the swelling of the feet, she consented to go to bed. All this time she was chiefly on the meat diet, and apparently digested it very well, as she had no eructations and no vomiting. Subsequently she had a more varied diet and complained a good deal of distention and uneasiness after eating, and on several occasions had regurgitation of food. The lump in the left side had apparently increased in size, but caused her very little pain, except when it was rubbed by the masseuse.

The condition when I saw her was as follows: Profound emaciation, particularly marked in the face. The mind quite clear; the voice strong, and the grasp of the hand firm and good. In spite of great wasting, she did not look cachectic, and the color of the lips was good. Pulse 84, of fair volume; temperature normal. Tongue was red with a light furry coat. Her chief complaint was of uneasy feelings of distention after food, and of the weakness and prostration. The sleep was not, as a rule, disturbed, though she had been taking opium suppositories to allay the irregular pains in the side. She had no cough; no diarrhœa.

The abdomen was a little distended, contrasting with the extreme emaciation of the thorax. The upper zone was full and the skin over the left hypochondriac and umbilical regions reddened with applications, and these parts looked the most prominent. No peristaltic movements were noticed on inspection. On palpation, there was felt a large mass occupying the area shown in the annexed diagram, extending to the right 2·5 centimetres beyond the navel and the same distance below. The edge passed transversely to the left to a point four centimetres above the anterior superior spine; the edge could then be followed readily in the line of this spine to the point of the last rib. Above, it passed beneath the costal margin, and the upper line reached to within five centimetres of the ensiform cartilage. It felt superficial, firm, not tender; below and to the right the edge was unusually distinct, and just at the navel there was a slight depression. The hinder edge could be distinctly felt, and it did not pass deep into the renal region.

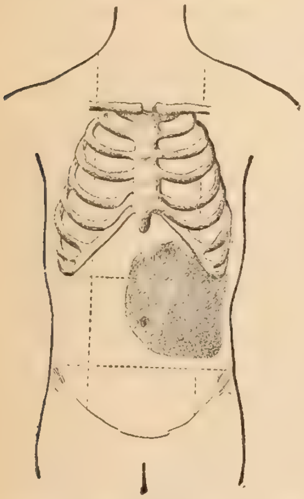

FIG. 19.—The tumor area in Case XXIII.

On bimanual palpation, the mass could be moved slightly. At the first examination there was no gurgling to be felt. On percussion, it was flat in the greater portion of its extent, but in the right fourth of the mass it was distinctly resonant.

There were no glandular enlargements. The blood examination was negative, with the exception of a very great increase in the blood plates.

I was not a little puzzled at first as to the nature of this tumor. The situation, the flatness, its superficial character, excluded definitely, it seemed, a movable kidney, which would not for a moment have been considered had I not been informed that a physician in whose judgment I have great confidence had in June pronounced this to be the condition present. The situation was suggestive, naturally, of an enlarged spleen; the right edge seemed thin and there was an indistinct feeling of a notch, but the very superficial character, the absence of a definite notch or notches, and, above all, the resonance over one half of the tumor, seemed inconsistent with this view. A phantom tumor in a hysterical woman had also been suggested. The large size, the unusual situation, and the slight character of the gastric symptoms did not favor gastric carcinoma, suggested, of course, by the profound emaciation and the existence of a resonant tumor in the left hypochondrium.

The next few days, however, developed additional symptoms which made this view very much more likely. On the 12th she had taken six oysters and one on the 13th. On the 15th she had eructations of dark, very offensive material, and regurgitated one of the oysters in a condition of decomposition, but undigested. On the 16th she regurgitated the chopped meat in a similar condition of decomposition, and a second oyster which had been very slightly acted upon. The odor of the materials brought up was intensely offensive. She had also at this time slight diarrhœa. The tumor did not show any material changes, but the area of resonance seemed to vary somewhat, and, on drinking, gurgling could be distinctly heard over the mass, and sometimes with the hand upon the tumor the flatus could be felt.

September 19th.—For the first time the patient to-day had attacks of actual vomiting, the first at about six in the morning and the second at noon. On both occasions she brought up about half a pint of dark, bloody fluid of a most horribly offensive character, having a distinctly fæcal odor, as well as an odor of decomposition. In the material last vomited there were several grayish, sloughy masses the size of peas, which under the microscope did not show any definite structure. The patient after these attacks was much exhausted.

For a week after this there was vomiting and at intervals entire inability to take food, and occasionally vomiting of the same offensive material.

Died gradually of asthenia. There was no autopsy.

The extent of the tumor was due to infiltration of a very large area of the anterior wall and fundus of the organ. In all probability there was also extension to the omentum and to the colon. Evidently sloughing took place in the tumor mass, and, judging from the fæcal odor of the vomitus, perforation into the colon had occurred.

CASE XXIV. *Large, Massive Tumor in the Epigastric and Upper Umbilical Regions.*—Patrick C., harness maker, aged fifty-six years, admitted April 15th, complaining of weakness and a lump in the left side.

Family history is negative; father died of accident; mother, cause unknown, aged fifty-five years.

Patient has never been a very strong man; was hurt when a lad by falling off a load of hay; rheumatism in 1876. Has always been rather pale; lived a sedentary life; has not been a heavy drinker; never had venereal disease. Within the past year he has lost between twenty and thirty pounds in weight.

Present illness began about a year ago with diarrhœa, which persisted for between eight and nine months. Sometimes he would have four or five stools in an hour, and often as many as twenty in a day. Never passed any blood; sometimes would have none for two days. Was always better when he rested in bed. Thirteen weeks ago he left off work on account of the weakness, and during this time he has been rather inclined to constipation. He thinks he has become paler. One day about three months ago he felt a lump under the left ribs, and this he thinks has increased in size. His appetite has been variable; lately it has improved somewhat. He has had no nausea and no vomiting; no trouble in digesting his food. Once or twice has had slight nausea after taking milk. Has had no pain; only a slight heavy feeling in the left side.

Present Condition.—Patient is pale, but not specially emaciated; hair and beard gray; conjunctivæ pearly white. Tongue lightly furred. Pulse, 96; vessel wall not sclerosed.

Abdomen a little prominent to left of navel; throbbing of abdominal aorta marked. Subcutaneous veins not enlarged. On palpation, occupying the left hypochondriac, the left half of the epigastric, and the upper and left part of the umbilical regions, is a large flat mass. To the right it extends a little beyond the navel, and here the edge can be felt, and at the lower part the suspicion of a notch. The upper limit is ill-defined. At the costal margin it is felt to extend a short distance under the ribs. On deep inspiration the hand can be placed between the costal border and the tumor, which in this region has a distinctly rounded globular surface. Above and to the right it can be separated distinctly from the liver. During inspiration and on deep palpation no splenic margin can be detected in the normal position. On prolonged palpation of the tumor, no changes in consistence can be felt; no gas is noticed to bubble through it.

Percussion.—In the middle line there is no dullness. There is resonance over the whole tumor. A modified, flat tympany is elicited in the left half of the epigastric region. The stomach tympany begins in the parasternal line at the upper margin of the seventh, and extends to two fingers' breadth above the navel. The artificial inflation of the stomach did not show any marked changes, and no gas was felt bubbling in the mass. The distention of colon with air made no change in it.

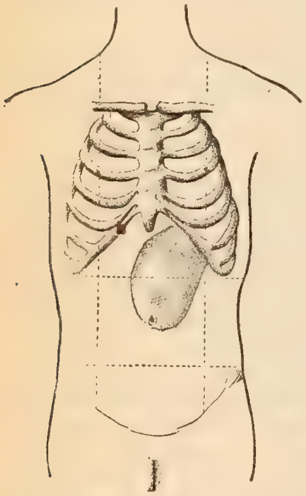

Fig. 20.—Outline of the tumor in Case XXIV.

The mass is distinctly, though not very freely, movable. It can not be pushed back under the costal margin, and in fact can not be moved to the left so that its right margin is beyond the middle line. It does not extend deep into the renal region, palpation in which is normal. The tumor mass is not at all sensitive. The liver dullness is reduced; in the nipple line not more than a finger's breadth; in the axillary line no actual dullness. Though there is this extreme diminution in the area of liver dullness, the edge of the organ can be distinctly felt just below the costal margin. Although the edge of the spleen could not be felt under the left costal margin, there was at the first examination definite splenic dullness over the ninth and tenth ribs in the mid-axillary line. The blood condition shows a profound secondary anæmia and is not specially suggestive of a splenic form. The examination shows only thirty per cent. of hæmoglobin, a little over three million red blood-corpuscles to the cubic millimetre, and a little over nine thousand white corpuscles.

The urine is negative, pale, no abnormal deposits, no casts. He is constipated. Stools formed, and presented no special features.

A test breakfast showed no free hydrochloric acid.

Comments.—April 19, 1893. It has been suggested that this mass might possibly be a dislocated and fixed spleen, but the solidity and firmness, the rounded character of the mass, and the indefiniteness of the notches (supposed to be felt) were against this. Moreover, dislocated enlarged spleens are usually very mobile, and, most important of all, the splenic dullness was quite marked in the mid-axillary line, and the mass was everywhere resonant.

One of the most suggestive features of the case is the onset of the disease with diarrhœa. The situation of the mass, its fixity, and its size are against tumor of the colon. There are, on the other hand, instances of malignant disease of the small bowel in which the tumor mass has attained a very large size, and in which progressive emaciation, anæmia, and diarrhœa have been the main symptoms. The most remarkable case of this which I call to mind is one which I saw at the General Hospital, Montreal, with Dr. Molson, for whom I made the dissection. A man, aged forty-one years, was admitted on March 4, 1882, with swelling of the feet, vomiting, and constipation. For six months he had had pains and vomiting and more or less constipation, with loss of flesh. The patient had general anasarca and shortness of breath. The abdomen was full and large, and the examination was very difficult on account of the infiltration of the abdominal walls, and there was ascites.

The post-mortem showed a large mass occupying the left half of the abdomen, from the ribs to the crest of the ilium. It was firmly attached to the left kidney behind, and the colon and sigmoid flexure were at its left border. It was removed with the small intestine, and the tumor was found to involve eighteen inches of the jejunum, which tunneled the mass in a curved direction. The walls were in places from six to eight inches in thickness. The lumen was expanded, the mucosa still evident, presenting blunt valvulæ conniventes.

In Case XXIV the main portion of this tumor is in the epigastric region in the situation of the stomach. Though firm and solid, it was resonant, and, in the absence of definite features, the probabilities seemed to me that it was a large, massive tumor of the anterior wall and fundus. He died in October, with what symptoms we could not learn. There was no autopsy.

Finally, let me sum up a few leading points for your guidance, based on the study of the cases we have had under consideration:

1. Though only a small section of stomach is available for palpation, a very large proportion of all tumors of the organ may be felt, owing in part to their greater frequency at the pyloric portion, and in part owing to the frequent depression of the organ. In every one of the twenty-four cases a tumor or induration was detected, and it is interesting to note that in the same period of time during which these cases were observed no instance came to autopsy with a tumor at the cardia or posterior wall.

2. In a considerable number of cases the dilated stomach itself forms a tumor in the abdomen, characterized by undulatory peristalsis, sometimes by a definite stomach contour. In ten cases of the series these features were distinct enough to render the diagnosis clear on inspection alone.

3. In a majority of cases no serious trouble is experienced in determining whether or not a tumor is in the stomach. Excessive mobility of a pyloric growth and extensive infiltrating masses in the epigastric region were the only conditions causing trouble in any of the cases of this series. The more systematic and thorough the examination, the less is the liability to error.

4. The character of the tumor is rarely in doubt. Large, nodular, and massive growths are invariably cancerous. At the pylorus it may be difficult to distinguish between cicatricial thickening about an ulcer, hypertrophic stenosis, and annular scirrhus. It may, in fact, be impossible to decide the question. The age, previous history, the general and local conditions—all have to be carefully taken into account, but, as in Cases XIII, XIV, and XV, it may not be possible to reach a definite conclusion.

And, lastly, the very serious nature of tumors of the stomach may be gathered from the fact that, of the twenty-four patients, eight have already died.

Original Communications.

A PECULIAR CHROMATOGENIC BACILLUS.

By LOUIS C. AGER, M. D.,
ASSISTANT BACTERIOLOGIST TO THE HOAGLAND LABORATORY, BROOKLYN.

Although chromatogenic saprophytes are too numerous to be worthy of a great deal of attention, the peculiarity of chromogenesis in the case of the following bacillus seems noteworthy. It is quite probable that many of the common organisms, if grown on suitable media or in the presence of suitable chemicals, will develop chromatogenic power as does this bacillus. Investigation along this line of biochemistry may show some interesting facts, and may yield results very useful in bacteriological diagnosis. A little work of this kind has been done by Wurtz in the differentiation of *Bacillus coli communis* and *Bacillus typhosus.*

I found the organism here described, and for which I would suggest the name *Bacillus violaceus sacchari*, in a contaminated tube of glucose-agar, while I was stationed at the United States Army bacteriological laboratory at the Chicago Exposition. The growth attracted my attention on account of the vividness of its color, and I inoculated a tube of ordinary agar, which, to my surprise, showed only a creamy white growth. A further study of the organism gave the following results.

Morphology.—On solid media, a small oval bacillus very like a micrococcus, with a few longer rods. In bouillon and in liquefied gelatin the elements are somewhat longer and sometimes they assume a comma form of about two thirds the size of the cholera spirillum.

Biological Characteristics.—A strictly aerobic, liquefying, chromatogenic (on sugar-agar), non-motile bacillus. Spore formation not observed. Grows rapidly at room temperature. In gelatin roll tubes minute spherical colonies develop at the end of two days. They are white, translucent, homogeneous, liquefying the gelatin very slowly, and never attaining any great size.

In sugar-agar plates the colonies are characteristic. The deep colonies are lenticular and opaque with clearly defined edges. The superficial colonies are white, translucent, and slightly granular, round, or somewhat oval, with clearly defined edges. They have usually a lenticular-shaped nucleus, showing their development from deep colonies. When viewed from the lower side they show four distinct zones—the opaque lenticular nucleus, a dark purple homogeneous area, then a narrow ring of deep red, and beyond that a translucent white zone.

This organism grows rapidly on agar, on glycerin-agar, and on potato, forming a thick, creamy white coat in concentric rings without pigment. It liquefies gelatin slowly, beginning on the third or fourth day, more quickly if grown in the dark. In litmus milk it has an acid reaction and a peptonizing effect.

Chromatogenesis.—This organism produces no pigment except in sugar-agar. In that medium there is at first a creamy white growth, but at the end of two days the agar begins to assume a blue tinge which deepens gradually to a brilliant purple near the surface, shading to a dusky red in the depth of the agar. No color is produced if the organism is grown in the dark. The pigment is soluble in water, insoluble in alcohol. At the end of two or three weeks the color begins to fade, changing at the end of a month to a dusky red.

Pathogenesis.—A small quantity of this organism inoculated into the ear vein of a rabbit gave no result.

THE PRACTICAL MANAGEMENT OF STRICTURES OF THE URETHRA.*

By CARTER S. COLE, M. D.

To bring before this society a subject so familiar, particularly in view of the experience at Charity Hospital, might to many seem to be a work of supererogation; and yet it is hardly probable that no one else but myself found that in the management of cases in private practice the methods of treatment with which we were familiar were not always satisfactory or applicable, or else a definite plan of treatment from the time the patient presented himself until the time he ought to be practically well was not an easy matter to formulate.

The explanation of such a condition of affairs has seemed to me to lie in the fact that we were taught to consider only one method of treatment applicable to a great majority of cases, or we were not sure when to vary from any one method or what course to pursue, even though the conditions might be absolutely dissimilar from those with which we were familiar. Back of all this may have lain an indefinite knowledge of the pathology of the condition, or, at least, an uncertain state of mind as to the possible kind of stricture with which we were confronted. To clear up this whole field would, even if possible, take much more time than is at my disposal; but if a succinct review of the pathology of stricture, and on it a working classification, can be given, and if from these some practical deductions can be made as to the management of these cases, it is to be hoped that your time has not been needlessly occupied in the consideration of this subject. From an anatomical standpoint we have the tripartite division into the spongy, the membranous, and the prostatic urethra. It is not a part of our task to review in detail the meatus with its fossa navicularis and lacuna magna, the anterior expansion and the posterior, bulbous expansion of the first named (and in this latter the openings of the ducts of Cowper's glands), the whole about six inches; nor of the second to more than recall that it measures three quarters of an inch on the roof and half an inch on the floor of the canal, and extends from the anterior base of the triangular ligament to the apex of the prostate; nor of the prostatic urethra, in which stricture does not occur, to do more than remind you of the importance of the various structures opening upon its floor (the veru montanum with twenty or thirty ducts of prostatic follicles on either side, and in front the sinus pocularis or uterinus masculinus, upon whose margins the ejaculatory ducts open). The glands of Littre, with their sinuses (Morgagni) directed and opening toward the meatus, are of some clinical importance. Histologically, the mucous, muscular, and erectile coats comprise the urethra, the former consisting, excepting the pavement epithelium immediately behind the meatus, of columnar epithelium, with little areolar tissue beneath; the muscular, of longitudinal and circular fibers interspersed with fibro-elastic and fibro-connective tissue; and the erectile coat of still less fibrous tissue.*

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* Read before the Society of the Alumni of Charity Hospital, November 1, 1893.

"The pathological condition varies from an induration and thickening of the mucous membrane, with connective-tissue proliferation recurring in its depth, to the formation of a dense fibrous mass of cicatricial tissue occupying the submucous region and extending into the meshes of the corpus spongiosum." † Keyes ‡ thus states the pathology: "The morbid change in organic stricture may be a mere thickening of the mucous membrane, the surface having lost its polish, being congested and perhaps covered with granulations. These changes are the result of chronic inflammation and resemble those which occur in any tegumentary structure of the body which is kept in a condition of mild chronic inflammation—namely, there is a proliferation of cellular connective-tissue elements, and a consequent proportionate increase in the thickness, denseness, and elasticity of the membrane. This process takes place just within and beneath the mucous membrane and not on its free surface, as shown by A. Guerier,# who states that in one hundred autopsies of patients with gonorrhœa, more than half of whom had stricture, he found the morbid process in these latter always to have acted immediately beneath the mucous membrane and in the spongy tissue. If the stricture is a little more extensive, a few whitish transverse fibers will be found encircling the canal beneath the mucous membrane. If more advanced still, the meshes of spongy tissue will be found glued together, obliterated, and a mass of dense, fibrous, callous material encircling the canal and holding it permanently contracted. Flaps, valves and free bands, adhesions, etc., are formed by atrophy of follicles or of portions of submucous tissue." In chronic granular urethritis Harrison ‖ sums up the changes thus: "To prevent urine soaking further into the tissue, inflammatory exudation is excited, and barriers of lymph, which ultimately become organized, are thrown out opposite the places where leakages take place. Thus, splints of plastic tissue are found corresponding with the spot or spots where the epithelium has been so damaged by persisting inflammation as to cease to discharge its normal function. In this strengthening of the urethra we recognize, in the first instance, a conservative action; eventually, however, as in other compensating processes, certain inconveniences follow which constitute, as it were, an independent disease."

By Otis, Lydston, and others special stress is laid upon the train of pathological changes consequent upon a loss of elasticity, this loss of elasticity and diminished distensibility being the most potent factor in converting the previous natural and congenital constrictions with comparatively diminished capacity for distention into pathological states demanding operative interference. To this is due the thinning of the mucous membrane and dilatation behind the plastic deposits, and later the infiltration of tissues and the pathological changes consonant with such states.

The ætiology is not a part of our theme, unless to mention that in order to arrive at any classification we must have a "*fundamentum divisionis*," and none other seems so well adapted to giving us a dichotomous division, and to aid us in the subdivisions. If we allow for our purpose that a stricture of the urethra is such a diminution of its caliber at one or more points as to produce pathological conditions or changes at the site of such diminution or elsewhere, we will have as our division:

A. Congenital.

B. Acquired $\begin{cases}\text{Traumatic.}\\\text{Infectious.}\end{cases}$

An acquired stricture may have originated in traumatism and been intensified by infection, or the reverse, and the cause may act from within or from without, or both ways.

Our subdivisions are easily made upon the extent and character of the pathological process; thus we would have soft, cicatricial, and inodular strictures (Keyes); linear and circular, as the deposit lies; single or multiple, as the names imply; of large or small caliber, according to size, etc.

Clinically, whether the cause be traumatism or infection, or both, or whether, following such causes, the loss of elasticity at the seat of the so-called natural constrictions makes it important to treat the latter, we have for practical purposes—leaving, for the present, out of consideration contractions at or within an inch of the meatus—the resilient, the pliable, and the tough strictures, terms sufficiently distinct to indicate the characteristics of the conditions present, and at the same time terms that easily suggest the method or methods we have found useful in their relief. We may for a minute digress to expand the ideas involved in the terminology favored:

1. The resilient strictures, as their name implies, easily demonstrate themselves to be such in the examination with a bulb (or urethrometer), yielding easily though giving a distinct grasp as the bulb reaches them, recontracting readily after the bulb has passed.

2. The pliable strictures do not give us that sensation of resiliency, are harder to pass with a bulb (or sound), and give us the sensation of an exudative process, in which

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* For fuller details consult Gray's *Anatomy*, also *Stricture of the Urethra*, by G. Frank Lydston, M. D., 1893.

† Morrow. *A System of Genito-urinary Diseases, Syphilology, and Dermatology*, p. 268.

‡ E. L. Keyes. *Genito-urinary Diseases with Syphilis*, p. 104.

Mém. de la Soc. de chir., 1857, vol. iv, p. 125 (quoted by Keyes).

‖ *Lettsomian Lectures*, 1888, quoted by Morrow. *Loc. cit.*, p. 264.

the exudation, though at times considerable, has not become highly organized, and will yield with no great difficulty to other forms of treatment than cutting.

3. The tough strictures are easily demonstrated as such, passable with difficulty by a bulb that is not decidedly smaller than the contraction, and transmitting a distinct impression to the touch of their unyielding character and of the advanced state of organization of the plastic exudation.

We may as well add here that to determine accurately in doubtful and advanced cases the state of the urethra, narcosis is essential; or, to put it in another way, where a cutting operation is contemplated narcosis should be insisted upon; in short, if we are unable to assure ourselves that a cutting operation is not demanded, anæsthetization should be invoked to settle the question. Again, we have already noted that we may have any variety or all varieties of stricture in the same urethra, and that there is no limit to the number of the same kind, or of different kinds, that may obtain in a given case. An acute inflammatory process is a strong contraindication to any instrumental examination. The location of the lesion (or lesions) is another important factor in the treatment. In a general way, we never do an internal cutting operation posterior to the anterior layer of the triangular ligament unless we are also going to follow it immediately by a perineal operation. At the meatus, or within an inch of the meatus, we usually employ a blunt bistoury, putting the parts on a stretch with the dilator, or a bulb, or a sound, and we have never found it necessary to completely divide the meatus down to the frenum. In justice to the methods about to be given, let me say that no one looked upon divulsion with more distrust than did I at one time, because I had been taught that it was inaccurate, unsurgical, and unscientific; and yet, in the face of repeated successes in the hands of others, and later in my own, it is but fair to give the result of that experience. While I have employed but one instrument in divulsions, there are others, doubtless, just as efficacious, although we naturally incline to the bridge that has given us a safe passage.

To take up, then, the treatment of strictures in detail, we may first emphasize the importance of absolute cleanliness in our instruments, of careful cleansing (with boric-acid solution, 1 to 12, or Thiersch, 1 to 2) of the urethra, and of using as a lubricant some sterilized material (Lydston* suggests ℞ Hydrargyri bichlor., gr. ss.; cocain. hydrochlor., gr. v; liq. albolene, f ℥ j—M.); in perineal operations, thorough irrigation of the bladder before and after operating. If a case demanding treatment offers in which a distinct contraction at or near the meatus obtains, we may, if we so desire, use a small olive-pointed bougie and map out in our minds the condition beyond; but we are not losing time if we relieve this patent source of trouble by an inferior incision, preventing the adhesion of the edges by inserting a pledget of iodoform gauze, lubricated by carbolized vaseline or the lubricant quoted above. When this has healed we may again carefully explore the urethra and determine the kinds and sizes of the strictures that demand further care. Reflex or spasmodic contractions, especially at the site of the bulbo membranous urethra, are sometimes completely relieved by the meatotomy, and spasmodic contractions elsewhere are generally so relieved. If we find that we have a resilient or a pliable stricture, or both, we cocainize the urethra, after the urine has been passed and the urethra cleansed, by injecting twenty to thirty minims of a two- to four-per-cent. solution of cocaine, keeping the meatus compressed for five or six minutes. Then with the dilator (Powell's) we divulse the strictures, slowly turning our knob, releasing and then turning again, until we have brought the urethra up to or just beyond its normal size or until we know the constriction is torn through, this method applying to strictures situated anterior to the triangular ligament. That such strictures may be relieved in a measure—at times apparently completely—by the patient and long continued passage of graduated sounds, aided by massage at the seat of the exudation while the sound is in the urethra, we are well assured; and in the bulbo-membranous urethra it is our practice to rely upon such a method of treatment unless an external incision be demanded. The resilient strictures are less readily amenable to treatment by sounds, doubtless because it is difficult to use a sound of sufficient caliber to completely distend them. It is hardly necessary to add that the sound need only be introduced as far as is necessary to distend the stricture—*i. e.*, where the constrictions lie wholly in the penile urethra the introduction of sounds into the perineal urethra is neither desirable nor expedient unless a reflex spasmodic contraction demands such a course for its relief.

To return to the divulsion: The after-treatment consists in having the patient wait six or eight hours before passing urine, or even using a carefully sterilized catheter for twenty-four hours, and in absolute restraint from other instrumentation for four or even six days, at which time a sound one or two sizes smaller than that to which the stricture has been divulsed is introduced, the same precautions as to cleanliness being observed. Thereafter, at intervals of a week for three weeks more, the same thing is done, and at the end of this time the urethra ought to be in good condition. The points of advantage in our experience have been less hæmorrhage, less tendency to recontraction and to adhesion of torn edges and, consequently, less need for frequent instrumentation, and the fact that general anæsthesia is not necessary, or indeed any detention from business for more than twenty-four or forty-eight hours. On the other hand, if a cutting operation is necessary, as we have uniformly found to be the case with the *tough* strictures, whether we first use a Maisonneuve and follow it by a divulser, or use the (Otis) urethrotome alone or as a sequel to the Maisonneuve (in strictures of very small caliber), we refuse to operate without an anæsthetic. The same precautions as to asepsis are followed; the smallest strictures anterior to the triangular ligament are completely divided—and by this we mean our incision, always in the roof of the urethra, goes through the plastic exudation; spasmodic contractions are then eliminated; and firm fibrous strictures in the perineal urethra are divided by an external incision. A sound beyond the normal size of the urethra is introduced into the bladder, and a catheter is introduced into the bladder through the perineal wound and left *in situ* after the bladder and urethra have been thoroughly irrigated. We have never found, in strictures of very small caliber, that packing the urethra with a dozen filiforms had any advantage over a single filiform gently and patiently introduced; indeed, with the many cases of retention that came under our observation at the Chambers Street Hospital there was only one in which a single filiform could not be introduced; and in this case, after a perineal incision had been made and the urethra opened, it was at least fifteen or twenty minutes before the operator could get any instrument into the bladder, and then a small probe was introduced, and, grasping it with artery clamps, the operator pushed these in, and, opening the jaws, pulled them out, thus facilitating the passage of a director and making the rest of the operation an easy matter. A filiform once introduced makes us complete masters of the situation. Its retention in the urethra for twenty-four hours is invaluable in effecting continuous dilatation, and often in cases that refuse operation affords a most serviceable means of temporary relief. Sir Henry Thompson * even maintains that by continuous dilatation (using a gum-elastic catheter) he can in ten to fourteen days dilate a stricture from the smallest number up to the highest. One other point we have noted in regard to the filiform: The twisted, bent, and other ends have never proved to be of more service than the simple, straight, olive-pointed instrument.

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* *Op. cit.*

The after-treatment in these cases has been to remove the catheter after twenty-four to forty-eight hours; not to pass any instrument (except for three or four days a soft rubber catheter through the perineal wound to draw off the urine) until the fifth or sixth day; then under cocaine anæsthesia to pass a full-sized sound, but one or two sizes smaller than the size to which the urethra was enlarged; then at intervals of four days for two weeks, six days for three weeks, and fortnightly for two or three months, pass this same-sized sound, at the end of which time the urethra ought to be practically well. We should not forget that the treatment has just begun when the stricture has been divulsed or incised. The fact that many men do an internal urethrotomy in the bulbo-membranous urethra is often attested by the infiltration, perineal abscesses, and other mishaps attending such a course. It is not necessary to add that we endeavor to employ the utmost delicacy in all urethral instrumentation. To endeavor to divulse the tough, cicatricial strictures is wasting time and is apt to break our instrument. If we discover that we have incorrectly diagnosticated the character of our stricture, having relieved several by divulsion, but find one not easily thus relieved, we should defer cutting until anæsthetization be possible.

It would be an easy matter to quote from our case books one or several cases illustrating each method proposed; it would be more satisfactory to demonstrate for yourselves the practicability of the lines we have followed —viz.:

1. When the symptoms point to urethral difficulties, accurately determine the conditions present, using for this purpose the hard-rubber olive-pointed bougies, of small size, or the bulbs of larger size, or the urethrometer (though the last named is by no means a necessary adjunct to our urethral armamentarium chirurgicum).
2. If a contracted meatus or constriction within an inch of the meatus obtains, immediate meatotomy and a careful subsequent examination of the whole urethra.
3. For resilient or pliable strictures in the penile urethra, divulsion under cocaine; in the bulbo-membranous urethra, the passage of sounds and massage, and in aggravated cases perineal incision under general anæsthesia; and in either case anæsthesia is permissible.
4. For tough (fibrous, etc.) strictures, urethrotomy (internal) in the penile urethra; perineal section in the bulbo-membranous, always under an anæsthetic in either case.
5. Careful and continuous after-treatment by the passage of sounds and massage at the site of the exudation while the sound is in the urethra.
6. In all cases, scrupulous cleanliness, a clear conception of the case from beginning to end, and a frank statement to the patient of what we propose to do.

A NEW METHOD OF EXAMINING THE KIDNEY, ESPECIALLY FOR STONE.*

By CHARLES P. NOBLE, M. D.,
SURGEON IN CHARGE OF THE KENSINGTON HOSPITAL FOR WOMEN, PHILADELPHIA.

I DESIRE to report to the society a short history of the case of Mrs. T., together with an account of an exploratory operation which I performed to enable me to examine her kidney, including the pelvis of the kidney and perhaps an inch of the ureter.

Mrs. T., aged thirty-seven years, mother of three children, enjoyed good health until six years ago. Since that time she has been more or less an invalid, and for the past six months she has been absolutely an invalid, unable to attend to her duties. The prominent points in the history are that she has had three well-marked attacks of hæmaturia accompanied by violent renal colic (so called), and that at least twice she has passed good-sized stones, the last one coming from the left kidney. In addition to this history of violent attacks of renal colic, she has suffered frequently with milder attacks of paroxysmal pain referred to the region of the right groin, and the pain being perhaps most acute just above the right trochanter major. Recently these attacks have been of daily occurrence and have been brought on when she was on her feet. She is usually, but not always, comfortable when in bed, but shortly after any attempts at walking the attacks of pain come on. The sexual organs are normal, with the exception of a trifling tear in the perinæum. The urine has been examined many times and has a very uniform composition. Its specific gravity has varied between 1·020, 1·013, and 1·018; it is acid, and contains pus, bladder epithelium, and ureteral epithelium, but none from the pelvis of the kidney. The urine from each kidney has been examined separately, the urine being obtained by means of the ureteral catheter. Examined in this way, it has been found that the urine from each kidney is much the same, the pathological elements it contains being somewhat more marked on the right side. This difference, however, was distinctly marked with reference to the two sides. The urine from the left kidney has always flowed through the ureteral catheter freely and regularly; that from the right kidney has not done so. Upon two occasions the ureteral catheter remained in position upward of twenty minutes, and not more than one or two drops of urine flowed out. Upon another occasion, after waiting thirty minutes with the same result, suddenly a hundred and twenty minims poured out.

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* *Diseases of the Urinary Organs*, eighth edition, p. 62 (1888).

* Read before the Philadelphia County Medical Society, January 26, 1894.

Taking all the facts of the case into consideration, the conclusion seemed fair that there was a stone in the right ureter, and that probably this was in the pelvis of the right kidney. Several attempts were made, both by Dr. Howard A. Kelly and myself, to pass a ureteral sound along the ureter toward the kidney. It was not possible to make the sound reach above the brim of the pelvis. It was therefore proposed that the incision be made in the loin for the purpose of examining the kidney and the upper portion of the ureter from above.

My experience in performing nephrorrhaphy for movable kidney after the technique of Dr. Edebohls has taught me the facility with which *a movable kidney* can be drawn out through an incision in the loin. So far as I know, no one has ever treated a non-movable kidney in this way. It occurred to me that this might be feasible, and that at all events an attempt judiciously made could hardly be a source of harm.

Accordingly, on the 12th of December I made the usual incision in the loin down to and through the circumrenal fat, exposing the lower end of the kidney. With the index finger the kidney was then separated from its connective-tissue attachments and gradually drawn down into and out through the incision, so that it was entirely outside. It was now a very simple matter to explore the kidney by thumb-and-finger pressure, and to made certain that it was in a normal condition. It was equally easy to examine the pelvis of the kidney and to determine that this contained no stone. Perhaps an inch of the ureter also was within reach.

As nothing abnormal could be felt, the kidney was replaced within the abdomen and the incision was sutured in the usual ways, buried silkworm-gut sutures being placed in the muscular layer, and superficial silkworm-gut sutures in the skin. No febrile reaction followed this operation, and, so far as the operation itself was concerned, the patient made an uninterrupted recovery. Unfortunately, the operation has produced no effect whatever on the symptoms, which are the same now as before it was done.

I report the case simply to bring before you this method of examining the kidney. From my experience in this case and in cases of movable kidney, I believe it will be a simple and safe matter in the hands of the skillful surgeon, who has had some experience in kidney work, to remove through an incision in the loin all non-suppurating kidneys having approximately the normal size, for the purpose of a careful examination. The procedure is certainly not one of much gravity, and when done under the conditions laid down should have no mortality. Tentatively I would recommend the adoption of this method of exploring the kidney whenever the symptoms point to the presence of stone in the kidney or its pelvis, and when these symptoms are of sufficient gravity to invalid the patient. I feel confident that, as compared with the ordinary method of exploring the kidney through the depths of the incision in the loin, the kidney itself being largely or wholly above the level of the ribs, and imperfectly palpated because of its movability, or examined by means of a puncture with an exploring needle, there can be no question of the superiority of the method proposed and herewith reported.

Upon theoretical grounds this procedure would not be applicable in cases of abscess of the kidney. Under these conditions supposedly, the kidney would be fixed and not easily separated from its connective-tissue bed. Moreover, it would be enlarged, and, in addition to this, there would be the risk of rupturing the pus sac perhaps into the peritoneal cavity.

A CASE OF INTUBATION OF THE LARYNX OF UNUSUAL INTEREST,

WITH SOME REMARKS ON THE MANAGEMENT OF SUCH CASES.

By W. M. SEWARD, M.D.,

VISITING PHYSICIAN TO THE PRESBYTERIAN HOSPITAL DISPENSARY, CLASS OF DISEASES OF CHILDREN.

The case of a girl, seven years old, of healthy German parents, was referred to me by Dr. A. A. Richardson. She had been sick for three days before my first visit—on November 29, 1893. The tonsils and pharynx were covered with false membrane; temperature, 100° F.; pulse, 112.

November 30th.—Doing well; temperature, 99·5°; pulse, 108.

December 1st.—In the morning she had a croupy cough, with some dyspnœa, which increased rapidly. I called again at 5 P. M. and found her cyanosed. The parents had called in Dr. George B. McCauliffe, whose residence was near by. He had his tubes with him, and, at my request, intubated at 6 P. M. This relieved the labored breathing and the cyanosis, but the patient was very weak. The temperature was 101°, the pulse 130, and the respiration 30. Steam inhalations were given, also calomel fumigations, twenty grains every three hours.

2d.—The patient had not recovered her strength so rapidly as I have seen in such cases, but was doing fairly well. The temperature was 101·5°, the pulse 128, and the respiration 28. Four drops of tincture of digitalis and a grain of ammonium chloride were given every three hours, with the effect of improving the pulse.

3d.—The temperature was 99°, and the pulse 108 and of good quality.

4th.—The patient was still improving.

5th.—The temperature and the pulse were normal.

6th.—I removed the tube; the patient breathed well and there was very little spasm.

7th.—She was very comfortable and took food well.

8th.—She was still improving and continued to gain until noon, when she took cold and was attacked with bronchitis and a recurrence of croup.

13th.—There was some dyspnœa, and the use of calomel fumigations and steam inhalations was begun again.

14th.—Dyspnœa was decided and there was suprasternal and epigastric recession.

15th.—The breathing was very labored and she was cyanosed. Emetics were given, but without relief.

16th.—Dyspnœa was increasing in the morning. Wishing to postpone operating the second time as long as possible, I informed the parents as to where I could be found. I called again at noon and found the cyanosis increasing. At 4 P. M. I introduced a fresh tube. The child was in a very poor condition when it was done, and she fell asleep at once, exhausted, and slept all night, except when coughing for a minute at a time.

17th.—The color was good, the temperature 102°, the pulse 138, and the respiration 34, and there were moist râles over both lungs.

18th.—The tube was coughed out at 5 A. M. The patient was somewhat croupy, but the tube was left out.

19th.—The croup increased again, and the parents were instructed to call upon me at any hour if the breathing seemed dangerous.

20th.—The patient was cyanosed again, and intubation was performed at 10 A. M., with perfect relief.

21st.—She was very comfortable and took food well. She continued to improve until the 30th, when, at 3.40 P. M., I removed the tube for the third time. The patient breathed well for only an hour; then the croup returned and increased steadily.

31st.—In the morning the breathing was quite hard, and in the afternoon the patient was somewhat cyanosed. As she had gained some strength, I thought it safe to leave the tube out a while longer.

January 1st.—At 12.10 A. M. the father called for me and said that the child had been breathing harder since my evening visit, so he feared she would live but a short time. Twenty minutes later I intubated for the fourth time and none too soon. I did not use a gag, as there was no time to be lost, and I hardly expected the child to revive again, for she was not only cyanosed, but almost pulseless, and the eyes had the glassy appearance too familiar to men who intubate and who are often called after children are practically dead. (In January I was called to intubate, and the child stopped breathing when the jaws were opened. The tube was introduced quickly and artificial respiration was employed; this started normal respiration again, but there was only enough strength to last for a short time.) The child revived, breathed easily, and fell asleep in her father's arms after about a minute. Twenty minutes later the color was better and the pulse was improved by giving 0·01 of a grain of strychnine in thirty minims of whisky hypodermically. There was œdema of the lungs, as one would expect after a patient had been so nearly dead from inability to get air.

2d.—The lungs were clearing up, and there were râles only in the large bronchial tubes. The color was good, the pulse 130 and of fair quality, the temperature 101°, and the respiration 30. The child was allowed to drink only from a teaspoon whenever the tube was in.

3d.—The temperature was 99°, the pulse 108, and the respiration 28.

4th.—The temperature and pulse were normal. After this she was given whatever she wished to eat.

8th.—She was allowed to walk about the room, and from this time she sat at table with the family and ate what she wanted, and there was no difficulty in swallowing. She gained strength rapidly and spent her time in playing and doing fancy work.

16th.—I removed the tube again. There was still stenosis, but it was not so decided as before. Dr. Joseph O'Dwyer was present and advised me to insert the tube again before leaving, as he did not think it safe to leave it out. I introduced a fresh tube, for the old one required to be soaked in an acid solution to dissolve the rough calcareous deposit that existed on its surface. It is best, in cases requiring repeated intubation, to remove the tube at least once a week and insert a fresh, clean one if necessary. Dr. O'Dwyer advises this.

17th.—The child was very comfortable and hearty and continued to increase in strength and flesh until the 24th, when I removed the tube for the fifth time and found that the breathing was better than it had been at any time before. Two grains of Dover's powder were given two hours before the tube was removed. This is very important, as it controls the spasm which is generally present. The tube had to be inserted again two hours later, as dyspnœa had gradually returned. At this time I inserted a tube made to order by George Ermold, with a greater vertical diameter of the head, to prevent the tube from pressing on the same tissues that the old one had rested on, and thus producing a tendency to the formation of granulation tissue or to ulceration. This tube was worn until February 1st, and then it was extracted, two grains of Dover's powder having been given two hours previously. After it was out the breathing was very satisfactory, except for the spasm after coughing, which was controlled by giving two grains of Dover's powder every four hours for twenty-four hours.

February 2d.—The child was very comfortable.

3d.—She had a severe spasm at night, and the father came for me to intubate, but after an additional dose of Dover's powder she breathed well again.

For the last two weeks the child has been taking potassium iodide, from four to sixteen grains a day. It may be thought that tracheotomy would have been less troublesome in this case. I know of a case, however, in which it was done because the tube could not be introduced, yet months after the patient was finally cured by reintubations after the tracheotomy wound had healed. In another case, in which I saw tracheotomy done after the tubes had been used for a long time, the patient died of pneumonia.

The chief points of interest in this case are as follows: 1. The time that elapsed from the first introduction of the tube to its last extraction—sixty-one days. It was out fourteen days and in forty-seven. 2. After the tube had been worn for a week or two there was very little difficulty in swallowing. 3. It shows that it is important to introduce a fresh tube at least once a week. 4. The patient is now well, and the tube has been out since February 1st.

A NEW ELECTRODE

FOR THE UTILIZATION OF CURRENTS OF HIGH TENSION, *WITH AN ILLUSTRATIVE CASE.**

By A. D. ROCKWELL, M. D.

Whenever it becomes desirable to influence by the galvanic current any internal organ or portion of the human body, it is frequently necessary, in order to achieve the best results that electricity is capable of giving, to apply currents of far greater strength than those usually employed, and indeed greater than it is possible, with the electrodes in common use, without producing injury to the skin and unbearable pain. Relatively to metals, animal tissue is, of course, a poor conductor, but, as compared with the epidermis, it is an exceedingly good conductor, and therefore, in making use of percutaneous applications of electricity to the human body, we need consider no resistance except that of its outer covering, the skin. Of the various conducting materials, I know of none so satisfactory in overcoming this resistance as sculptor's clay. The comparatively slight resistance that the clay itself offers to the passage of the current must be attributed not alone to its moisture, but to the contained aluminum, which imparts to this material some of the conductibility of metal.

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* Read before the Medical Society of the County of New York, December 25, 1893.

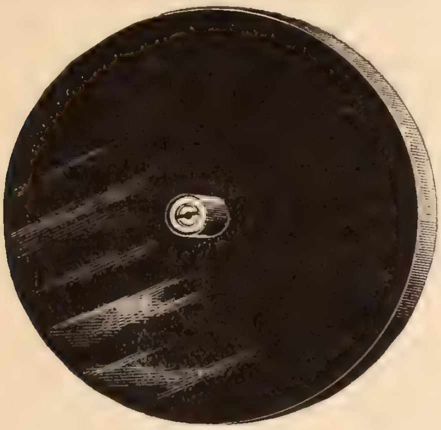
FIG. 1.—Rear view.

The objection to clay is that it is dirty, and difficult to handle without soiling the clothes and person of both physician and patient. To overcome this difficulty and thus render available this most useful material for general electro-therapeutical purposes, I have devised the arrangements illustrated in the accompanying cuts. These electrodes * are of a non-conducting material—hard rubber—and may vary from one to five inches in diameter. The bottom of the disc is covered with block tin. This is an important feature, since, with the strong currents used, ordinary metallic conductors speedily become oxidized at the positive pole and their efficiency is impaired.

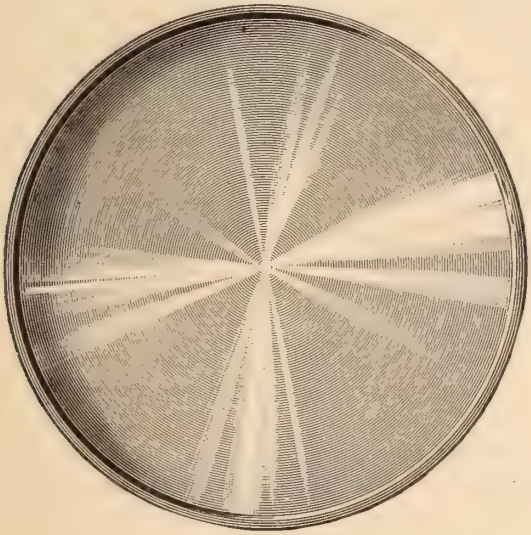
FIG. 2.—Front view.

Block tin for all ordinary purposes is practically non-oxidizable. When wanted for use, the electrodes are simply filled to the edges or a little beyond with the moistened clay and we have at command an electrode which permits the application of very strong currents without discomfort to the patient.

One who has been accustomed to use only electrodes of sponge, or absorbent cotton, or chamois skin will be surprised at the strength of current it is possible to administer through these contrivances.

With an electrode of this kind, two inches in diameter, one can readily bear from seventy-five to a hundred milliampères, and, on the well-known law that the greater the area the less the resistance, we have only to enlarge our electrodes to obtain with the same electromotive force an increased current strength, that is just as readily borne, since it is distributed over a larger area.

To illustrate the very remarkable results that it is sometimes possible to achieve in the suppression of pain and to show the especial value of the electrodes here described, I will relate a case interesting in more ways than one that was referred to me by Dr. Louis Sass:

The condition of this patient, a woman, had been diagnosticated by a number of eminent physicians in a neighboring city as one of "fallen spleen." Dr. Sass diagnosticated the condition as malignant, and with this diagnosis I concurred.

Dr. Joseph D. Bryant, at my request, made a most thorough examination of the patient, and not only diagnosticated cancer, but located it in the left kidney. With this diagnosis Dr. E. G. Janeway, who was further on requested to see the case, fully agreed, and subsequently Dr. Hermann M. Biggs, who had not seen the patient and knew nothing of her condition, made a thorough urinary analysis, finding among other things cholesterin crystals, thus confirming Dr. Bryant in his location of the disease.

Dr. Biggs thus writes: "The presence of cholesterin crystals in the urine is of exceedingly rare occurrence; only a few cases have been recorded in medical literature.

"They can only mean a degenerative process in the kidney associated with fatty metamorphosis.

"This has probably occurred in a malignant neoplasm of the kidney. The only case which I have seen (post mortem) was one of cystic sarcoma of the kidney."

When the patient came to my office, on the 24th of August last, she was suffering the most excruciating pain both day and night.

She had suffered in this way for nearly four months, and no effort had been made to relieve this suffering by any form of opiates. The use of electricity had been attempted, but in a way and by a method that aggravated rather than relieved her sufferings.

Beginning in the left side of the abdomen in the region of the enlargement, the dreadful pain—sometimes keen and cutting, at other times dull and aching, but never altogether absent—extended to the region of the left breast and shoulder blade. At her first visit clay electrodes, five inches in diameter, were placed one over the seat of the tumor and the other just under the left shoulder blade.

Very gradually the current was increased to seventy-five to one hundred, and finally to one hundred and fifty milliampères.

The result was little less than magical.

All pain disappeared for the first time in months, and for twelve hours she was entirely comfortable, after which the pain again began to appear.

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* Made for me by the Kidder Manufacturing Company.

It is unnecessary for me to go into the history of the daily treatment of this case. To every one except the patient the case was admittedly hopeless. She alone hoped on, for she could or would not associate such complete relief with an incurable disease, and in this belief she was not disturbed.

The patient grew weaker and weaker, and finally on the 15th of November passed away.

Unfortunately, no post-mortem could be obtained. For two months no day passed without the administration of the electrical treatment, and seldom without absolute and complete relief from pain. The interesting feature connected with the treatment is that mild currents had no effect over the pain. It was only when a hundred, and more frequently a hundred and fifty, milliampères were used that the distress was overcome. This is by no means an isolated case of the complete relief of pain in cases of cancer by the use of the galvanic current. The pain of scirrhous cancer of the breast is sometimes relieved just as completely as in the case just recorded, and with currents of far less strength. This is due to the fact that the diseased part is superficial and readily influenced by the current. When the *locus morbi*, however, is further removed from the surface of the body, rendering it impossible to get the electrodes in close proximity to it, it becomes necessary to use a far greater strength of current. The threads of current, so to speak, diverge so abruptly that parts but a little distance away, although directly in the path between the two poles, are but slightly influenced unless the current is very strong—far stronger than it is possible to obtain from the ordinary portable batteries, or that could be borne through the electrodes in common use.

SUCCESSFUL REMOVAL OF GUNPOWDER STAINS.*

By W. M. NELSON, M.D., C.M.,
SYRACUSE, N. Y.

The frequent occurrence of injuries to the skin by gunpowder explosion and the disfigurement that almost invariably results therefrom are, perhaps, sufficient excuse for my calling attention to a mode of treatment that has for its object the removal, more or less complete, of the carbon deposited in the skin and subcutaneous tissue, the which constitutes in the vast majority of cases the constant and permanent disfigurement.

Before going further, I may say that this paper will not deal with those slight degrees of injury where the carbon is not projected into the tissues, but simply lies partially imbedded in the epidermis and can be readily removed by the curette or spud.

The lesions the treatment of which I purpose to consider are those produced when the force of the explosion and the nearness of the victim entail the forcing of particles of carbon into the true skin and subcutaneous tissue.

Those who have been called upon to treat these lesions must have remarked that the "grains of powder" spoken of in text-books have been conspicuous by their absence, and that that which is found is an impalpable powder suspended at first in the blood and serum and then becoming imbedded in the tissues, and efforts to remove any of it that is not superficial by curetting only serve to drive it deeper.

The carbon is non-irritant, or nearly so, and, should no other foreign body or bodies accompany it into the tissues, there is no pus formation, no perceptible loss of tissue, and the injured part soon regains its original condition in every particular but that of color—more or less staining, analogous to that produced by tattooing with gunpowder, India ink, etc., remaining. The stain caused by the lodgment of black particles in the derma and underlying tissue is always of a blue color; this is explained by the fact that the color particles are viewed by transmitted light through the transparent epidermis and a portion of the corium.

In recent lesions and tattooing the carbon is diffused, but it soon becomes fixed in the lymphatic ganglia, subcutaneous tissue, and slightly in the corium. The particles that merely lie on and in the epidermis are thrown off by unassisted Nature.

The question of the possibility of removing carbonaceous staining has never received a great deal of attention, probably for the reason that tattoo marks are usually situated on covered portions of the body and limbs, and that accidental gunpowder marking has been looked upon more as a gentle reminder of an escape from serious or fatal injury than anything else. The fact also that the stains seldom amount to more than an unsightliness is doubtless another reason for this neglect; but that they are sometimes the starting point of skin lesions is shown by the case reported by Fox, of New York, of a tattoo mark of an anchor upon the lines of which twenty warts developed (*American Journal of Cutaneous and Genito-urinary Diseases*, vol. ii, p. 216). Keloid also has been known to follow tattooing.

The following are a few of the methods that from time to time have been vaunted as capable of removing these stains:

1. Fly blistering.
2. Vaccination.
3. Tattooing in milk, enamel, tannin, acetic acid, lactic acid, oxalate of potassium, ten per cent. solution of nitrate of silver.
4. Electrolysis.
5. Incisions, under antiseptic precautions, planned so as to include as many points as possible.
6. Variot's plan. This consists in pouring over the marked spot a concentrated solution of tannin which is worked into the skin by deeply pricking it with a multiple needle; then the part is firmly rubbed with a stick of silver nitrate and the solution of the salt allowed to remain until the prick marks show out as black points. The part is then wiped off, and the result is the formation of a black stain of the tannate of silver. Considerable inflammation

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* Read before the Medical Society of the County of Onondaga, N. Y., December 19, 1893.

is set up, and in the course of a fortnight scabs form, on the disappearance of which no trace is left of the original mark, but only a reddish scar that fades with time.

7. Retattooing with glycerole of papoid.

Of all these methods of treatment, only the last three are worthy of consideration, and, in my humble estimation, that by the glycerole of papoid is the best. Removal by incision can only be carried out in selected cases, and is always followed by scarring.

Variot's plan is painful, sometimes dangerous from the intensity and extent of the inflammation produced, and at all times means an unsightly patch or patches, which persist for a lengthened period and are followed by indelible scarring.

The use of glycerole of papoid for the removal of tattoo marks was first advocated by Dr. Ohmann-Dumesnil, of St. Louis, in the *New York Medical Journal* of May 20, 1893, but, so far as I know, this is the first time his method has been applied to staining caused by gunpowder explosion. My experience with it I will now relate, and at the same time exhibit the individual upon whom it was carried out.

On the 4th of last July the son of a prominent minister of this city was brought to my office suffering from injuries received from the premature discharge of a small cannon. I learned from the father and the physician who accompanied the boy that the cannon had been so overcharged and tightly rammed that when the charge exploded it forced its way through the vent instead of the muzzle, and into the boy's face. The condition of things found was as follows: Forehead, nose, anterior halves of cheeks, chin, eyelids, conjunctivæ, helix, anthelix, fossa of helix, and lobule of each ear densely studded with particles of carbon. In many places the force of the explosion had torn the skin, and in the tears were masses of carbon, in a state of fine division, ranging in size from a small pea downward. There was also some burning of the first and second degrees. Altogether it was the most marked case of facial staining by gunpowder I had ever seen. I curetted all parts that permitted of my doing so and endeavored with this small instrument (Piffard's comedone extractor) to express as much of the carbon in suspension as possible. The father was informed that a great deal of permanent staining would result despite any efforts made on the old lines of treatment, but that with his permission I would carry out the method recommended by Ohmann-Dumesnil for the removal of tattoo marks. Consent was readily given, and on July 5, 1893, I commenced tattooing with glycerole of papoid and completed the process two days later.

The glycerole produced no irritation (in fact, there was a remarkable absence of it), the lesions scabbed over, and when I left for my vacation on the 11th of July the face was almost healed and all stains apparently fading away. I did not again see the patient till September 9th, and he received no further treatment.

As you see, there are only three minute stains left; that on the eyelid was not treated with papoid, as the curetting and pricking produced so much inflammatory œdema that I concluded to reserve the spot for another occasion.

I volunteered to remove the present minute stains with papoid or electrolysis, but the patient and family consider them of no consequence, and are entirely satisfied with the present condition of things.

In conclusion, I may say the treatment is an empirical one, and I can not explain or describe what takes place after the introduction of the papoid.

Dr. Ohmann-Dumesnil's statement that the papoid is disseminated about the deposit of pigment and liberates it (this liberation, I suppose, is brought about by the digestion of the albuminous envelopes of the carbon particles), that a portion in a finely divided state is absorbed by the lymphatics, and the rest finds its way to the upper layers of the skin, thence to the surface, is a plausible but not altogether satisfactory one.

Some time in the future I hope to report the result of experimental work now under way.

406 Warren Street.

REPORT OF A CASE OF
PRIMARY SARCOMA OF A CHILD'S LIVER.

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PROFESSOR OF HISTOLOGY AND BACTERIOLOGY
IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF DENVER;
NEUROLOGIST TO THE DEACONESS HOME HOSPITAL;
PATHOLOGIST TO ST. LUKE'S AND TO THE ARAPAHOE COUNTY HOSPITALS.

The odd things with which a pathologist meets are not necessarily of great importance to medical literature, but the knowledge of their existence may make us a bit more cautious, a bit more accurate, and, because of this, better diagnosticians.

The following case is not exceedingly rare, but sufficiently so for record, and especially as it was carefully studied:

G. B. P., aged three years and a half, was born in Colorado, of strong and healthy parents. In the family there is no history of consumption, deformed members, or tumors.

The patient is a full-term child. The labor of the mother extended over a period of sixteen hours and the birth was fairly easy. When the patient was sixteen months old he had while teething one severe spasm. Two months later he had whooping-cough, and during this he had another severe spasm.

On several occasions he has had slight attacks of croup. Otherwise he has enjoyed good health, without being very robust. The symptoms of the present trouble date from the latter part of June, 1893. For three weeks he had a continued fever, which was thought to be either a mild typhoid or a simple catarrhal enteric fever. He then was able to be up and about. Soon after this, while playing with a playmate, he quarreled about a small hatchet and got quite angry. During this spell he began holding his breath, which he had a habit of doing. While thus holding his breath his mother noticed him fall backward, apparently unconscious and very pale. She picked him up and he recovered his breath and consciousness.

It is not known whether he was struck with the hatchet.

From that time his mother noticed a swelling in the epigastrium that was hard and round.

Soon, within two weeks at least, he began to have ascites. This was not recognized by the attending physician, who began to pass a catheter and later a rectal tube to reduce the size of the abdomen.

The fluid at last completely distended the abdomen, and on August 15th he was tapped and a full wash basin of fluid was withdrawn. For ten days the opening discharged the fluid and it then healed up. Immediately it began to reaccumulate. He was tapped the second time September 20th, or five days before the taking of this history.

Eleven days ago he began to cough. The cough has been dry and slight.

Ever since his continued fever he has been progressively running down in weight, strength, and vitality.

Appetite now capricious and poor. Bowels regular. Stools thin, soft, and light in color. Pulse, 156; temperature, 99·5° F. No history of chills.

The result of the physical examination made September 25th was as follows: In the left half of the epigastrium and in the left hypochondrium there is a hard, round, smooth mass, not movable, of the size of two fists. This mass is dull on percussion, gives no pulsation, no thrill, and no fluctuation.

Abdomen greatly distended. All signs of fluid in the dependent parts. Superficial veins of abdomen distended. Patient greatly emaciated. The respiratory sounds are clear on the left side, but bronchial over the base of the right lung The heart's area is increased; its apex is raised. The heart sounds are distant and muffled, but are apparently normal.

Uranalysis.—Urine of a dark amber color, of a strong urinary odor; specific gravity, 1·024; acid in reaction; no albumin to heat or nitric acid; no sugar; no special microscopical features. A faint reaction was obtainable to the test for bile salts.

From the examination, the diagnosis in the case was not difficult. Some tumor mass was present in the abdomen, and the portal vein or its radicles were pressed upon. As to the nature of the mass no positive diagnosis could be made.

Was it a fibroma, an aneurysm, a hydatid cyst, an adenoma, a cystic left kidney, a dermoid cyst, a sarcoma of the liver or kidney, a carcinoma, or a fæcal mass?

As the prognosis was very bad, the diagnosis was postponed.

On September 30th the patient died at St. Anthony's Hospital, where two hours later I was permitted to make a post-mortem examination. On opening the abdomen, two quarts and a half of clear, dark amber, odorless fluid escaped. The peritonæum was found normal.

On opening the pleuræ, both were found to contain the same dropsical fluid, but neither was seriously distended.

The pericardium was completely distended by the serous fluid. This hydropericardium was undoubtedly the immediate cause of death. The heart lay almost vertically under the third and fourth ribs. The apex lay at the outer end of the fourth costo-sternal cartilage.

The heart was of fair size, the ventricles were normal in thickness, and the valves were perfect. In the right ventricle there was a small heart clot. The blood of the body was otherwise fluid.

The left lung was found anæmic, but otherwise it was fairly normal. A few patches of emphysema were found over the surface. All parts of the lung floated on water.

The lower lobe of the right lung was solid and presented all evidences, except pleurisy, of croupous pneumonia. The upper lobes of this lung were quite œdematous.

The spleen was small but normal; the intestines, the stomach, and both kidneys were normal.

The liver proved to be the seat of interest. It was greatly enlarged and presented some perihepatitis on its posterior surface. It weighed three pounds and ten ounces—more than the normal adult liver. The entire upper two thirds of the liver presented no hepatic structure, but was thrown up in three tumor masses. One sprang from the left lobe and pressed the diaphragm and heart upward; one came anteriorly from the left border of the right lobe. This mass was the tumor, the size of double fists, found on the physical examination in the epigastrium and left hypochondrium. The third mass was found projecting from the right lobe, which lobe was but a mass of new tumor material. This tumor projecting was the smallest of the three masses. In the lobus Spigelii, at the base, there was a node of infiltration, and here and there, in the apparently normal hepatic tissue, there was serous infiltration. The mass on the upper surface was tense, whitish yellow in appearance, and sharply defined from the normal liver tissue.

The tumor mass projecting anteriorly gave evidence of fluctuation, and, on section, two or three ounces of dark grumous fluid escaped.

Section of the tumor in any part, except the recently infiltrated areas, revealed a dark-brownish, red mass, with here and there yellowish or creamy patches, due to fatty degenerative changes.

In the more recent and infiltrating areas the section was a light pink, studded with small red, brown, and yellow points—hæmorrhagic patches in various stages of alteration.

Nowhere in the mass were found any well-defined connective-tissue trabeculæ.

The gall bladder was small, but uninvolved by the tumor. It contained some bile, which could be expressed from it into the duodenum.

From the naked-eye appearance of the tumor sections, the diagnosis of sarcoma was made.

Later, microscopical sections of various parts of the infiltrating mass showed it to be a small round-celled sarcoma.

No tissue like involuntary muscle could be found in any section, as is sometimes found in these early sarcomas.

A NEW FORM OF ABDOMINAL BANDAGE FOR USE AFTER DELIVERY.

By A. HRDLICKA, M.D.

A part of the necessary attention to a delivered woman consists in the long-use-sanctioned and in many cases undoubtedly useful abdominal bandage.

It was invented with the view of supporting the relaxed abdominal parietes after a childbirth, and it was found not only to do this, but also, when properly applied, to exercise a beneficial pressure on the puerperal womb during the first week of its involution, stimulating it to keep up or increase its contraction.

These are uncontested advantages in an abdominal bandage *properly applied* and *held in place;* its *theory* is absolutely correct; but in practice, as any observer with even a limited field of work must admit, it generally falls short of these aims for various reasons, and has on that account been almost discarded by some physicians.

The material used for these bandages up to the present time, as we all know, has been bleached or unbleached muslin, applied either complete or partially cut on each side as a tail bandage. The application itself is made as soon as possible after the removal of the placenta, and with this begin the difficulties of the present bandage. The semi-exhausted woman, whose pelvis and back are in a condition compatible only with completest rest, must elevate her pelvis or have it elevated—which is still worse—so that the bandage may be slipped under. This done, we pass to another difficulty—the proper fastening of the bandage in front. Our purpose is to apply an even pressure all over the abdomen, and this with the most common, complete bandage is well-nigh impossible; with the tail bandage it is much easier, yet not even here is the matter so simple as it would appear.

Having succeeded in applying our bandage perfectly, the first thing we see at our next visit to the patient is that it has slipped off, forming a mass of distressing wrinkles under the back and having all its pressure relaxed; or, if we applied the bandage low enough to avoid this, we find it soiled so much that we ourselves must unfasten and take it off. And the second application causes more inconvenience, as a rule, than the first.

Having all these difficulties in view, I have tried to replace the old bandage by something that, possessing the same or probably greater advantages, would not have these drawbacks, and I think I can safely say, though the extent of my experience hardly warrants it, I have succeeded.

I have had a case of oblique presentation in which, after delivery, the uterus retained an oblique position, the fundus lying entirely on the right ilium; there was a history of an injury affecting the region of the left broad ligament in the first part of gestation. I was able to reduce the uterus to the normal position manually, but, as soon as my hand was withdrawn, it returned, giving rise to local pains and distress. I ineffectually tried a compress and the usual bandage, and on my third visit resorted to a compress held in place by strips of adhesive plaster, and this worked to my perfect satisfaction, suggesting to me at the same time the entire replacement of bandage by adhesive plaster.

Trying it in practice since then, I have found it work admirably; it overcomes one and all of the disadvantages of bandages and effects more than the best of them.

Six two-inch strips of plaster usually suffice. They are cut of a sufficient length to pass over the abdomen from one to the other of the quadrati lumborum muscles. Over the surface of the abdomen a thin layer of cotton is laid, leaving about four inches on each side for the plaster to adhere, and if advisable in uterine atony or required from some other reasons, a suitable pad is put on the cotton and then the strips are applied over it, beginning with one over the compress. The woman is spared the slightest motion. There is no soiling, no possible infection as from unsterilized muslin, the plaster adheres perfectly and serves its purpose better than the most carefully applied of bandages could do, and it can be removed or reapplied with the greatest ease, not interfering in the least with abdominal examination.

I hope my little invention will attract the notice of my professional brethren. I do not know but some one may have employed the same before me; in that case I would join my humble voice with his and recommend the adhesive-plaster bandage heartily.

307 East Seventy-second Street.

The Randall's Island Hospital.—Dr. Frederick Peterson has been appointed visiting neurologist to the hospital.

Change of Address.—Dr. William N. Hubbard, to No. 17 East Thirty-eighth Street.

TO SECURE ACCURACY OF DOSAGE WHEN PRESCRIBING BY "TEASPOONFULS."

By LOUIS FAUGÈRES BISHOP, M. D.,
ATTENDING PHYSICIAN, DEPARTMENT FOR DISEASES OF THE NERVOUS SYSTEM, DEMILT DISPENSARY.

Every one must have been annoyed by the irregularity of dosage when using the good old formula, "a teaspoonful three times daily," due to the personal equation on the part of the patient in selecting a spoon and in filling it when selected.

Many and obvious as are the ways of avoiding the teaspoon in medicine, it is certain to remain on account of its convenience.

I have hit upon the following plan, which satisfactorily overcomes the inaccuracy of dosage without banishing the spoon:

Before prescribing I ask the patient to select from among the spoons in my office one resembling that which he habitually uses. Then I hand the patient a four-fluid-ounce graduate and a bottle of water or of any handy fluid that is of about the same specific gravity as the medicine I intend to prescribe. Now the patient is instructed to pour out doses and place them in the graduate. When the fluid doled out reaches one or two fluidounces I stop him, and write my prescription on the basis of five, six, seven, eight, or nine doses to the fluidounce, according to the number of doses to the fluidounce he has placed in the graduate.

I have been surprised at the constancy of the personal equation in this simple operation in each individual, and at the wide difference between individuals.

In one case (that of an epileptic), in a prescription to last two weeks, the variation in the number of doses he gets out of it is only two or three, representing a variation of average dosage for separate periods of two weeks of only one tenth of a grain of the bromides which he is taking.

The Oakdale, 36 West Thirty-fifth Street.

The late Professor Billroth.—At a recent meeting of American physicians in Vienna the following resolutions were adopted:

Whereas, The hand of death has fallen on our profession, and we are called upon to mourn the loss of one of its greatest leaders, in behalf of the American physicians in Vienna and at home be it

Resolved, That in the death of Professor Theodor Billroth we recognize an irreparable loss, not alone to the physicians of Europe, but to those of the world.

Resolved, That in this termination of his laborious, worthy, and brilliant career the members of his profession have lost one of their most conscientious and honored coworkers, one whose death they profoundly deplore, and whose memory they venerate.

Resolved, That we extend to the family and to the faculty of the Vienna University our heartfelt sympathy, and assure them that these sentiments will be shared by every physician in our land.

Resolved, That we be represented at the funeral by a committee, and that a copy of these resolutions be presented to the family and to the faculty of the university.

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PROPOSED LEGISLATION IN FAVOR OF ACTING ASSISTANT SURGEONS.

We lately expressed our hope that some means would be found to relieve those who served in the late war as acting assistant surgeons in the army—contract surgeons as they were commonly called—of certain obstacles in the way of their obtaining the rewards due them for meritorious and in some instances gallant services. How grievous these impediments are is set forth in a preamble to House Bill No. 5837 (Senate Bill No. 1594).

The preamble recites that before, during, and since the war of 1861 to 1865, but chiefly during the war, private physicians were employed as medical officers, serving under the orders of their superior officers as such, agreeably to *Army Regulations*, in the armies of the United States, in addition to the commissioned medical staff, because the number of the latter was not sufficient for the necessities of the service. These men were known officially as acting assistant surgeons, and they performed exactly the same duties, and were subject to the same control as commissioned medical officers. They were employed under contract made in accordance with paragraph 1268, *Revised Regulations of the United States Army*, 1861, and paragraphs 1304 and 71, Appendix B, *Revised Regulations*, 1863, and were obliged to remain in the service of the United States for a stated time. Among these officers were many of the eminent physicians and surgeons of the United States. Some of the duties performed by acting assistant surgeons were as follows: They were in charge and command of United States military hospitals, known as general, division, field, and post hospitals; they had charge and command of United States military hospitals for the care of contagious diseases; they were in command or in charge of hospital trains, hospital boats, and ambulance trains, and were executive officers of United States general hospitals; they acted as brigade and regimental surgeons, and at least one acting assistant surgeon acted as medical director of a department for nearly a year; they were responsible for hospital funds and property, and also post funds; they served on courts-martial, which the *Articles of War* require shall be composed of officers, and also on boards of survey, in camp, field, and garrison, on overland expeditions, and in Indian wars; they faced death and endured hardships like commissioned officers, and it is known that nearly one hundred and fifty died in the military service of the United States.

They were allowed fuel, rations, quarters, and transportation in kind, could purchase rations from the commissary, were allowed traveling expenses the same as commissioned medical officers with the rank of first lieutenant, and were accorded, by order of the War Department, the same protection in their position, the same respectful subordinate conduct, and the same military courtesy from enlisted men as if they were commissioned officers, because they were placed in the position of commissioned officers so far as related to their duties. Many of them were also required to wear the uniform of an assistant surgeon. Acting assistant surgeons who were disabled by reason of disease contracted or injury received in the military service have been granted pensions under a law which assimilates them to the rank of first lieutenant of the military or Marine Corps.

But because they were not commissioned as officers, but were employed by contract as such, they are denied admission to military organizations like the Loyal Legion and the Grand Army of the Republic; and to relieve this unjust discrimination, and to give a proper recognition to their patriotism, duties, responsibilties, services, hardships, and exposures, they ought to be entitled to receive the rank for which they are allowed pensions and which will relieve them from these disadvantages.

The bill provides that private physicians who were employed as medical officers in the armies of the United States for a period of not less than three months, in accordance with the *Revised Regulations, United States Army*, who were known officially as acting assistant surgeons of the United States Army, and whose services were honorably terminated, shall be commissioned by the President of the United States as acting assistant surgeons of the United States Army; the date of employment as acting assistant surgeons to be the date of commission and muster into service, and the date of the honorable termination of service as acting assistant surgeons to be the date of discharge or muster out of service. It is stipulated that no pay or allowance shall be made to any such acting assistant surgeon by virtue of the act, and that the act shall not affect the rank, pay, or emoluments of commissioned medical officers of the United States Army.

We presume that the bill is not intended to apply to those who have taken contracts since the close of the war, but it is not so stated specifically. Be that as it may, we are convinced that the passage of some such bill would be no more than an act of mere justice to a deserving set of men, and we hope that Congress will so view the matter.

GROSS CLEANLINESS IN OBSTETRICS.

A very startling statement has recently been published to the effect that the introduction of the doctrines of antisepsis and asepsis into obstetric literature and teaching has not materially lessened the mortality of childbed outside of hospitals. The reason alleged is that the doctrines of minute (or, if we may term it so, "microscopic") cleanliness have not taken hold upon the minds and conduct of the mass of private practitioners.

Can it be that by following too closely the teachings of bacteriologists the instructors in obstetrics of our colleges have overshot the mark—have got too far in advance of the average medical student? It is possible that the young graduate from such teaching may fall into one or the other of two grave errors when he is brought face to face with the hurry and worry of busy practice, with the prejudices of parturients and with the innate or acquired uncleanness of the, perhaps diplomaed, grannies of various ages whom he classifies at once by the dirt under their uncut finger nails. He may either despair altogether of asepsis and give up not only the use of the nail-brush but even the thorough washing of the hands in soap and water before vaginal examinations, or be betrayed into thinking that the dipping of the hands into antiseptic solutions, so feeble in percentage of antiseptic salts and so slightly applied that they do no good, will take the place of thorough scrubbing with soap and water, of cleanliness in clothing, and of neatness of personal habits.

It might be well to have in our medical schools two courses of lectures on obstetrics, one embracing the highest scientific teachings of applied bacteriology concerning the best methods of germ destruction, the other giving certain plain practical lessons in ordinary midwifery, including simple rules of cleanliness such as the most careless graduate might be expected to comprehend and actually apply in practice. As distinguished from that "microscopic" cleanliness which involves the wearing of white robes, the scraping of the finger nails with sharp implements, the soaking of the hands in successive chemical solutions, the irrigation of the mother's parts with antiseptic washes in ordinary labors, and the closing of the vulva with antiseptic cotton pads, this "gross" cleanliness would include the wearing of clean underclothing upon the arms by the physician and nurse, the thorough washing of hands (and in operative cases of the arms to the elbow) with soap and warm water and the careful use of a nail-brush, whenever the genitals were to be touched, the washing of the vulva by the nurse before each examination or series of examinations, and the cleansing of all instruments which were to be used.

While "microscopic" cleanliness should be maintained in hospitals and should be insisted upon by obstetrical teachers in all cases in private practice where the patient is thought to be infected before labor or where the doctor has been attending suspicious cases, this "gross" cleanliness should be carefully drilled by reiteration and example into students for use in private cases where no infection is suspected. Fatal sepsis following its neglect ought to be ground for legal prosecution of the practitioner. The reasons for dwelling upon these principles of "gross" cleanliness are very strong: First, they are sufficient in ordinary labor cases. Second, "microscopic" cleanliness is in many cases not attainable—the necessary appliances are absent and the mother and nurse think it needless and resent it. Third, in the absence of "gross" cleanliness "microscopic" cleanliness is inefficient. What, for instance, is the use of dipping the hands into antiseptic solutions when the finger, to reach the cervix, must pass through an unwashed vulva tainted with decomposing fæces, blood, and urine? Yet who ever heard an ordinary practitioner inquire whether the parts had been washed before making a vaginal examination? It need hardly be added that "gross" cleanliness is just as much needed and, if possible, more neglected in cases of miscarriage which demand manual assistance.

MINOR PARAGRAPHS.

THE RELATIONS OF OPIUM-EATING TO LIFE INSURANCE.

Very few opium-eaters have any thought of insuring their lives—they do not concern themselves in regard to the future—and very few have the means with which to pay premiums on policies after their supply of the narcotic has been paid for. The *Independent* thus speaks of the opium investigation now in progress in India: "It has been stated that among the so-called evidence used by the government party to bolster up the pro-opium side, the Oriental Life Assurance Company, which does almost the entire native business of India, testifies that no extra premium is charged to users of the drug, and states that during twenty years not a single claim has been paid for death which could have been attributed to the use of opium. Granting that the statement is correct, we would like to know to what extent life insurance policies are taken out in opium dens in India. It is doubtless true that similar statements might be made with regard to policies paid to *habitués* of the dives of New York or any American city. It does not therefore follow that opium has no effect to shorten the life." It is a peculiarity of the testimony on the opium question that the witnesses who hold office in India are nearly all pro-opium, while the non-official class are almost unanimous in the other direction. This applies to medical witnesses as well as to others.

TUBERCULOSIS AND BOARDS OF HEALTH.

As our readers are well aware, various important boards of health throughout the country have lately become exercised over the question of including tuberculosis among the infectious diseases that they require physicians and householders to report to them, and over the further question of what their authority, with due consideration of expediency, warrants their doing in cases reported. In some quarters rather arbitrary measures have been proposed—not actually carried out or resolved upon, so far as we are informed. An example of wholesome considerateness in this matter has been set by the Michigan State Board of Health, a body that has always wisely inclined to achieve public sanitation rather by spreading sanitary education among the people than by harsh interference in household affairs. On the 30th of September the board adopted a resolution to the effect that thenceforth consumption and other diseases due to the *Bacillus tuberculosis* should be included in the official list of those that householders and physicians were required to give notice of to the local health officers as soon as the nature of the disease was recognized in individual instances. In a circular announcing the adoption of this resolution, for a copy of which we are indebted to the board's excellent secretary, Dr. Henry B. Baker, attention is directed to the fact that the question of the patient's isolation is not mentioned in the resolution. Its purpose, the circular goes on to say, is to secure to the local health authorities and to the State board information of the locality occupied by each person affected with tubercular disease, with the view of giving him trustworthy information as to how he may avoid reinfecting himself and infecting others, and telling persons most endangered how to avoid contracting the disease.

THE CHARITIES OF LONDON.

According to the nineteenth annual *Directory to Metropolitan Charities*, over $27,000,000 are spent in a year in carrying on the work of 759 societies and institutions. Of these latter there are 206 in which the medical profession is interested. Their respective number and object, together with their income stated in English values, are given in the following paragraph:

"Twenty-five charities for the blind, £74,299; seven charities for deaf and dumb, £20,565; five charities for incurables, £51,527; two charities for idiots, £59,165—£205,556. Sixteen general hospitals, £351,247; eight consumption hospitals, £70,235; five ophthalmic hospitals, £15,876; three orthopædic hospitals, £5,462; five skin hospitals, £8,487; sixteen hospitals for women and children, £88,825; four lying-in hospitals, £13,942; twenty-nine miscellaneous special hospitals, £119,884—£673,958. Twenty-nine general dispensaries, £29,083; thirteen provident dispensaries, £9,321; six institutions for surgical appliances, £38,599; twenty-six convalescent institutions, £64,449; seven nursing institutions, £11,708—£153,160."

The orphan asylums, diet dispensaries, and homes for aged persons are not included in the summary above given, but their income is very liberal and they are fully a hundred in number.

AN ABORTIVE TREATMENT OF QUINSY.

In the February number of the *Annales des maladies de l'oreille, du larynx, du nez et du pharynx* there is an abstract of an article by M. Liégeois, published in the *Revue de clinique et de thérapeutique*. The author states that he has succeeded in aborting an attack of quinsy between the fourth and sixth days in six cases by means of combined local and general treatment. At the outset he cauterizes the tonsil once by painting it with a solution of one part of zinc chloride in twenty parts of glycerin. The eschar separates in forty-eight hours. After the cauterization, a drachm of salol is to be taken in the course of twelve hours. The salol acts as an intestinal antiseptic, an antipyretic, and an analgesic.

A NEW CLINICAL SOCIETY.

The staff of the Brooklyn Central Dispensary has organized a clinical society, for the purpose of holding a monthly interchange of views on medical and surgical subjects. Reports of the more important cases occurring at the dispensary clinics will be presented and preserved. The name of the organization is the Central Clinical Society of Brooklyn. Among the members are Dr. Barber, Dr. Lucas, Dr. Yorke, Dr. Anderson, Dr. Cochrane, Dr. Jelliffe, and Dr. Wood. The meetings will be held on the fourth Thursday of each month.

NEW YORK STATE BOARD OF HEALTH.

The Albany correspondents of the daily papers have been writing concerning certain alleged defects of discipline and nonperformance of work on the part of the board's clerical staff. They also state that Dr. Lewis Balch will resign his position as secretary and executive officer. Dr. Balch has been in the health service for ten years and upward, having succeeded the late Dr. Alfred Ludlow Carroll. The work of the board, under Dr. Balch, has been exceptionally strong in the direction of the water supply and drainage systems of numerous towns and villages in the interior of the State.

THE KINGSTON AVENUE HOSPITAL, KINGS COUNTY.

The institution used by the board of health of Brooklyn, formerly known as the Contagious Disease Hospital, has had its name changed to the title above given. Consideration for the feelings of the unfortunates who are obliged to be treated for contagious maladies and be separated from their families, and consideration for those families as well, has been one of the motives for this change of name. Dr. Jesse T. Duryea, formerly a medical officer at the Kings County Hospital, will assume the superintendency of the Kingston Avenue Hospital about March 1, *vice* Dr. H. Bullwinkel.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 27, 1894:

DISEASES.	Week ending Feb. 20.		Week ending Feb. 27.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	0	0
Typhoid fever	2	4	9	2
Scarlet fever	129	14	134	12
Cerebro-spinal meningitis	4	4	2	1
Measles	499	27	430	31
Diphtheria	170	49	188	61
Small-pox	23	3	37	9

The late Dr. Michael K. Hogan.—At a special meeting of the medical board of St. Vincent's Hospital, held on the 26th of February, 1894, to take action on the death of Dr. M. K. Hogan, the following minute was adopted:

The members of the medical board of St. Vincent's Hospital, having learned with profound sorrow of the death of their highly esteemed colleague Dr. M. K. Hogan, on whose long and faithful service as attending physician, on whose rare ability, and on whose devotion to the sick poor all the officers and the sisters of the hospital have placed the greatest value, have resolved to attend his funeral in a body, and, through the medical journals, to make known their appreciation of the high personal and professional character of their late associate.

[Signed.] J. A. McCreery, M. D., *Secretary.*

The Eleventh International Medical Congress.—We are requested to announce that Professor H. J. Johnston-Tavis, of Naples, will be pleased to aid and advise American visitors to the congress during their stay in Naples.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 18 to February 24, 1894:*

Ten Eyck, Benjamin L., First Lieutenant and Assistant Surgeon, will report in person to Baily, Joseph C., Colonel and Assistant Surgeon General, president of the examining board appointed to meet at Fort Sam Houston, Texas, at such time as he may be required by the board for examination as to his fitness for promotion.

Moseley, Edward B., Major and Surgeon. The leave of absence on surgeon's certificate of disability granted is extended one month on surgeon's certificate of disability.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Four Weeks ending February 17, 1894:*

Murray, R. D., Surgeon. To proceed to Key West, Fla., for special duty. January 26, 1894.

Bailhache, P. H., Surgeon. Granted leave of absence for twenty days. February 5, 1894.

Purviance, George, Surgeon. Detailed as chairman of the board of examiners. February 12, 1894.

Stoner, G. W., Surgeon. Detailed as member of the board of examiners. February 12, 1894.

Carter, H. R., Surgeon. To report at bureau for temporary duty. February 2, 1894. To proceed to Brunswick, Ga., Quarantine as inspector. February 6, 1894. Detailed as recorder of the board of examiners. February 12, 1894.

White, J. H., Passed Assistant Surgeon. Granted leave of absence for seven days. February 17, 1894.

Carrington, P. M., Passed Assistant Surgeon. Granted leave of absence for thirty days. February 19, 1894.

Bratton, W. D., Passed Assistant Surgeon. Granted leave of absence for thirty days. January 20, 1894.

Pettus, W. J., Passed Assistant Surgeon. Granted leave of absence for thirty days. January 30, 1894.

Vaughan, G. T., Passed Assistant Surgeon. To report to the Secretary of the Treasury for special duty. January 26, 1894.

Young, G. B., Assistant Surgeon. Ordered to examination for promotion. February 14, 1894.

Stimpson, W. G., Assistant Surgeon. Ordered to examination for promotion. February 14, 1894.

Brown, B. W., Assistant Surgeon. Ordered to examination for promotion. February 14, 1894.

Rosenau, M. J., Assistant Surgeon. Granted leave of absence for thirty days. February 26, 1894.

Cofer, L. E., Assistant Surgeon. To proceed to Mobile, Ala., for duty. January 30, 1894.

Eager, J. M., Assistant Surgeon. Granted leave of absence for four days. January 30, 1894.

Blue, Rupert, Assistant Surgeon. Granted leave of absence for eight days. January 26, 1894.

Norman, Seaton, Assistant Surgeon. Ordered to examination for promotion. February 14, 1894.

Prochazka, Emil, Assistant Surgeon. To proceed to New York for duty. January 24, 1894. To proceed to Buffalo, N. Y. for temporary duty. February 2, 1894.

Society Meetings for the Coming Week:

Monday, *March 5th:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society (private), New York; Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; Providence, R. I., Medical Association (annual); St. Albans, Vt., Medical Association; Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society.

Tuesday, *March 6th:* New York Neurological Society; New York Obstetrical Society (private); Elmira, N. Y., Academy of Medicine; Buffalo, N. Y., Medical and Surgical Association; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland and Baltimore; Essex, Mass., South District Medical Society (annual—Salem).

Wednesday, *March 7th:* New York Academy of Medicine (Section in Public Health, Legal Medicine, and Vital Statistics); Harlem Medical Association of the City of New York; Society of the Alumni of Bellevue Hospital; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton); Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

Thursday, *March 8th:* New York Academy of Medicine (Section in Pædiatrics); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *March 9th:* Yorkville Medical Association (private), New York; Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.

Saturday, *March 10th:* Obstetrical Society of Boston (private).

Professor Eulenburg, the newly appointed editor of the *Deutsche medicinische Wochenschrift*, we are informed, will not move from Berlin to Dresden, as was his intention of doing before assuming his editorial duties.

Answers to Correspondents:

No. 423.—1. Most of the volumes are valuable. The series as a whole is well worth having. 2. The supplementary volume of Buck's *Reference Handbook of the Medical Sciences*, recently published.

Letters to the Editor.

BISMUTH POISONING.

Dublin, Ireland, *January 27, 1894.*

To the Editor of the New York Medical Journal:

Sir: The letter of Dr. N. L. Wilson in your columns of the 24th ult. suggests some questions as to a case which has caused a good deal of interest in America as well as in England—that of Mrs. Maybrick. Mr. Maybrick's symptoms corresponded to a large extent with those described by Dr. Wilson. In eight ounces of his intestines Dr. Stevenson discovered a grain and a half of bismuth to 0·015 of a grain of arsenic. In the liver, however, he estimated the proportions at a third of a grain of arsenic to a grain of bismuth. Arsenic, I believe, is often found in bismuth, and the bismuth given to Mr. Maybrick does not seem to have been tested for arsenic. It will be recollected, too, that a small quantity of arsenic had been administered by the attendant physician, Dr. Humphreys, who considered the effects beneficial; but Mr. Maybrick objected that it burned his throat, and his wife—the supposed poisoner—discontinued the use of it. He had been in the habit of taking considerable quantities of arsenic as a stimulant, but the evidence that he had done so shortly before his last illness was defective.

Another medical question connected with the case is relapse and exhaustion occurring after a dose of sulphonal.

A Barrister.

AN IRRIGATING SPECULUM.

Rochester, N. Y., *February 14, 1894.*

To the Editor of the New York Medical Journal:

Sir: In your issue of November 4, 1893, I described a new vaginal speculum (for irrigating and washing out the uterus and vagina), and in your issue of January 27, 1894, Dr. Talley describes one of his inventions which will answer for a part of the purposes for which Davis's will, and claims two days' priority. I am glad that Dr. Talley had the same idea without knowing anything about my instrument, as it shows that such an instrument was wanting and that he deserves the same credit as though his instrument had been made before mine. While I was assisting in Professor Rokitansky's *Klinik* in Vienna, where such a large number of women came for local treatment, I saw the necessity for something to wash and irrigate the vagina and os uteri without wetting everything under the patient. And it was there I visited three surgical manufacturing houses, with H. Reiner at the head, and in the same way in Berlin during the year 1892, with H. Windler heading the list, with a negative answer. As my time was limited after returning home, I only had one made for my own use, but on August 23, 1893, I had Mr. George Ramsdell, of Rochester, make a woodcut of my instrument, and he gave me four impressions, which I mailed to Messrs. Ford, A. S. Aloe & Co., Sharp & Smith, and George Tiemann & Co., who all replied that they did not know of an instrument that would answer the same purpose and were willing to make it. After it was placed in the hands of the makers (Tiemann & Co.) I had a few reprints struck off and mailed to physicians I knew, and showed it at the Pan-American Medical Congress in the registration hall of the Willard House. Early in September I showed the first instrument made by Messrs. George Tiemann & Co. to a goodly number of Rochester physicians, and with their criticism and my suggestions it was returned to the makers. JAMES C. DAVIS, M. D.

THE WEST-SIDE GERMAN DISPENSARY.

1244 BROADWAY, NEW YORK, *February 19, 1894.*

To the Editor of the New York Medical Journal:

SIR: At a special meeting of the Medical Board of the West-side German Dispensary, held on Saturday, February 17, 1894, it was

"*Resolved*, That the president be instructed to inform the *New York Medical Journal* and the New York *Medical Record* that the Medical Board of the West-side German Dispensary disclaims all knowledge of, complicity with, and responsibility in the articles which recently appeared in the daily press regarding occurrences in this dispensary. FERD. C. VALENTINE,

President of the Medical Board of the West-side German Dispensary.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of February 1, 1894.

The President, D. B. ST. JOHN ROOSA, M. D., in the Chair.

Preventive Medicine.—Dr. W. W. POTTER, of Buffalo, read a paper with this title. (To be published.)

Dr. A. JACOBI alluded to the legal means of suppressing contagious diseases. Communities were usually much opposed to the enforcing of sanitary rules. We should have to come to it certainly, for it was the only way in which such things could be controlled. The general welfare was of more importance than individual right or personal comfort. The family physician was the person from whom the greatest good could come, in the way of educating the people by teaching them individual hygiene. Many diseases would not take hold of persons in perfect health. They could not have tuberculosis, diphtheria, cholera, and so forth, so long as their mucous membranes were healthy and intact. The whole mucous membrane of the respiratory and alimentary tract was covered with epithelium which, if sound, crowded off any bacilli that found lodgment there. One of the first things to be done in a family was to correct all catarrhal conditions, not to allow colds to go on, and, if children had hypertrophied tonsils, to attend to them—leave no diseased membrane upon which diphtheria could take hold, and you had destroyed the most fertile field of that disease. It was rather hard to control those sources of danger, because many heads of families objected to having their children's tonsils removed or their noses burned out. There was no doubt that we all lived in an atmosphere of tuberculosis, but so long as our mucous membranes were in a healthy state we were safe from the disease. It was the same with cholera and typhoid fever. What was needed was individual effort in educating the people to understand the importance of assisting the physician in preventing disease.

Dr. J. WEST ROOSEVELT dealt with the question from its legal aspect. He thought that the first persons who needed instruction as to what was wanted to procure immunity from disease were the physicians. The medical profession would have no difficulty in getting legislation on a question when they found out what they wanted, but the trouble would be to get them to abide by the rules laid down. It was all very well to preach to people, but the physician would have to look at home first and think how he would act in the event of his having tuberculous friends or relatives who would have to come under some stringent sanitary rule. In an attempt to stamp out tuberculosis, if one thought of the whole ground that would have to be covered, the task seemed almost too stupendous and hopeless to undertake. It must be remembered that if a law was made that could not be enforced and had to be repealed, it would give to the advancement of preventive medicine a most serious setback.

Dr. S. S. BURT said that he agreed with the writer of the paper in believing that the most important part of medicine was undoubtedly preventive. We could not legislate for people that did not want legislation, consequently it was the duty of the physician to teach them what they wanted in the way of preventing disease. The pathologist was finding out what diseases were, and what would prevent or kill the germs, but this was not all that was to be done; patients could be got into such shape that they could resist disease-producing elements. Just now no such thing was expected as the killing of all disease germs, but attention was directed to fortifying patients against their onslaught. The best way of preventing disease was to educate the people to an understanding of their condition. We were constantly surrounded by tuberculosis, and the best way to prevent taking it was by keeping ourselves in the best possible shape and by so directing people whenever they came under our care. Tell all patients to avoid expectorating tuberculous sputa on floors and streets, explain fully to them what it means, he said. He should not become discouraged if the outlook was not bright, but continue to work in a direction that would bring all diseases under control; one by one they were being crowded out. For example, small-pox was fast becoming eradicated.

Dr. J. D. BRYANT referred to the work of the health board of New York and to what had been done by it during the past four years. He spoke of the bill presented by himself in relation to tuberculosis in cattle. It had been so drawn that a diagnosis was imperative, and, when that was made, the animal was to be killed and cremated. Of course the fight was still on, there was so much to contend with. Nobody wanted to lose his animals, even if he was remunerated. He thought that the educational methods referred to would do much more toward the prevention of disease than any law that could be made until people were prepared for it.

Dr. Potter did not want to be understood as asking the academy to make laws, but he wanted to ask that it enter upon a campaign of education for the prevention of disease. It was to the academy that the out-of-town doctor looked for the directing element in any great medical undertaking, and it was only by their combined efforts and co-operation that the success of such a work could be hoped for. It must be borne in mind that it was not the highest function of the physician to give a dose of medicine, but to teach the prevention of disease. It was the special function of the academy to strengthen the power of the various health boards throughout the country, for much better work might be done by them if they were not so hampered by ignorance. Let it be considered the duty of the academy to see that all literature promotive of preventive medicine be freely distributed where it would do the most good, and by this means educate the people to a sense of their responsibility in preventing disease.

Book Notices.

The Theory and Practice of Medicine. Prepared for Students and Practitioners. By James T. Whittaker, A. M., M. D., Professor of the Theory and Practice of Medicine in the Medical College of Ohio, etc. With a Chromo-lithographic Plate and Three Hundred Engravings. New York: William Wood & Co., 1893. Pp. xvii–3 to 821.

In the preface the author states that "in the preparation of this book the most work has been put upon the infections, as the most frequent and dangerous, at the same time the most preventable, of all diseases"; so, when we open the subsequent pages, we find that the first two chapters discuss the ectozoa and entozoa, presumably serving to carry the student's mind from the consideration of these grosser parasites to the micro-organisms discussed in the third chapter. The latter would seem to properly belong to a work on bacteriology or perhaps to one on medical diagnosis rather than one on practice.

The entire first part of the volume is devoted to the various communicable and infectious diseases, and the author includes among the latter those whose clinical history suggests infection, although the respective causes of the diseases in question have not yet been discovered. Each disease is considered in a practical fashion that will, we think, be much appreciated by the student, especially the advice given in regard to treatment.

The second part of the volume is devoted to diseases of the organs of digestion, of the respiratory organs, of the circulatory organs, of the genito-urinary system, and of the nervous system.

The author states that he has intentionally omitted reference to the morbid anatomy of disease; but one can not help thinking that it would have been very useful to the reader to enforce the clinical picture by a description of the pathological changes.

It seems, too, that the author has frequently failed to do himself justice; his treatment of the subject of diseases of the nervous system is so condensed that this section savors more of a conspectus than of a text-book, and by no means expresses the extent of his familiarity with this topic.

We hope that in the second edition of this work, for its practical features and recent information will undoubtedly cause a second edition to be called for, the author will treat of his various topics with that greater elaboration of detail that we are justified in expecting from his scholarship.

Traité de médecine. Publié sous la direction de MM. Charcot, Professeur de clinique des maladies nerveuses à la Faculté de médecine de Paris, Bouchard, Professeur de pathologie générale à la Faculté de médecine de Paris, et Brissaud, Professeur agrégé à la Faculté de médecine de Paris. Par MM. Babinski, Ballet, P. Blocq, Brault, Chantemesse, Charrin, Chauffard, Courtois-Suffit, Gilbert, Guinon, Le Gendre, Marfan, Marie, Mathieu, Netter, Œttinger, André Petit, Richardière, Roger, Ruault, Thibierge, Thoinot, Fernand Widal. Tome IV. Par MM. Ruault, Brissaud, Le Gendre, Marfan, Netter. Avec figures en noir et en couleurs dans le texte. Tome V. Par MM. André Petit, Œttinger, Brault. Avec cinquante-six figures dans le texte. Paris: G. Masson, 1893. Pp. 1112, 906.

The system of competitive examinations obtaining in France, the successful passing of which is the *sine qua non* of all hospital as well as of university preferment, entails great respect being shown to the fortunate candidates. Their learning and mental qualifications for the post they are to occupy have become well known to their fellow-competitors, to the various juries, and even to the general public during the long years throughout which has lasted the struggle for what has proved the unattainable to the vast majority. The seal of their success assures the public that these men have acquired a vast deal of learning and a superior degree of the requisite skill in handling either a patient or a treatise, and that their long scientific training will guard them from errors arising either from ignorance or from forgetfulness. In all future topics discussed by these scientists the subject-matter will inevitably be duly marshaled and all opposing opinions stated without an undue personal bias. Moreover, these good soldiers will go through all the manœuvres in which they have been so patiently drilled without any display of awkwardness, even with the extreme ease that only long habit brings. But, as they are usually middle-aged when finally freed from the rank and file, their spontaneity is dead, and, since it is now too late for the majority of them to undertake original investigations, they will continue as they have begun, becoming constantly more erudite and better clinicians. Hence the books written by such men are to be accepted as judicially correct, as containing no conclusions that have been warped by passion or distorted by ignorance. Ample information will be given on every subject, the style will always be good, the letterpress excellent, and the only thing their critic can do is to admire, perhaps without envying, a system that can produce such a large percentage of admirable workmen. All this is peculiarly true of the authors of the present volumes, who are indeed among the best known of the younger generation of the French masters.

The diseases of the respiratory and circulatory systems are discussed. The affections of the nose and throat are described by A. Ruault. The chapter on asthma is by E. Brissaud and that on whooping-cough by P. Le Gendre. A. B. Marfan studies the pathological conditions of the bronchial tubes, the chronic diseases of the lungs and of the mediastinum. Among the various types of bronchitis he mentions a subdivision of the pseudo-membranous, rarely described—namely, the acute fibrinous, of unknown origin, and the chronic pseudo-membranous. Among the diatheses supposed to be more or less influential in entailing tuberculosis, we find Marfan adverse to including scrofula, dissenting in this from the usual opinion held upon the subject. Netter has charge of the chapters on acute pulmonary and pleural diseases. André Petit has incorporated in his work on the heart all the various conclusions of Potain, Huchard, and others. The interdependence of the heart and its arterial ramifications are shown by these men to be clearly demonstrated by the pathological history of the circulatory system, hence we believe it would have been advisable not to subdivide the subject and not to assign the diseases of the blood-vessels to W. Œttinger. The latter writes also of acute articular rheumatism in a style that is neither masterly nor comprehensive. Why rheumatism should be classed, as it has been in this treatise, in direct sequence with aortic lesions, is a problem, for, although the circulatory disorders are only too manifest in rheumatism, it is at least supposable that vasomotor disturbances lie in a causal manner behind them, due most probably to a microbe yet to be found. The recent tendency is, as we know, to classify acute articular rheumatism among the infectious diseases.

A. Brault treats of the urinary diseases.

There is a slight divergence in the various treatments proposed for essentially similar conditions that leads one to hope that ultimately, in despite of old traditions, the doctor will have the courage to maintain an armed neutrality in all cases where an active interference is demonstrated to be of no avail. We refer for the moment to the revulsive treatment of exudations, which in pleurisy has been, according to Netter, so justly condemned by Woillez, Dieulafoy, Laborde, Germain Sée, and many others, but which, curiously enough, André Petit persists in recommending in pericarditis, at least as a means of relief to the patient. That André Petit can reason more wisely sometimes is well shown in his argument against Œrtel's treatment of fatty heart.

A Treatise on Nervous and Mental Diseases, for Students and Practitioners of Medicine. By Landon Carter Gray, M. D., Professor of Nervous and Mental Diseases in the New York Polyclinic; Visiting Physician to St. Mary's Hospital, etc. With One Hundred and Sixty-eight Illustrations. Philadelphia: Lea Brothers & Co., 1893. Pp. xi-17 to 687.

The author states that the leisure of seven years was devoted to the preparation of this volume, and none but one of the foremost neurologists in this country could have succeeded in condensing within less than seven hundred pages a text-book on nervous and mental diseases. In fact, most writers on neurological topics have required that much or more space to present their ideas on either nervous or mental diseases alone. But the author's long experience as a teacher and his wide range of information regarding the literature of his subject have enabled him to discriminate nicely as to what knowledge is most neednd by the student and practitioner. As he states, "superfluous knowledge, like surplus food, may clog the activity of the mind"; the researches of physiological chemistry regarding the autogenous intoxication products have demonstrated how surplus food may clog the activity of the mind, and a psychologist should be most alive to the disastrous results of mental cramming that tend to make the individual 'deep versed in books, but shallow in himself.'"

We wish that every medical college could have inscribed on its walls the following: "Medical nihilism is an error of youth and a confession of impotence, for Nature rarely afflicts man beyond the hope of relief. The therapeutist has enormous resources. Not only does the physical world provide a great variety of medicinal subjects and transmute its forces to suit his will, but likewise the physical world is bounteous in its aid. Far from spurning his inheritance, the ideal physician should gather his knowledge of disease and its antagonists from every quarter, and exert every faculty for his patient's welfare, which is his own true success." Too often the instructor informs his pupils with exceeding care of the ætiology, pathology, and diagnosis of disease, and then says that it is incurable; he makes no effort to teach them what to do to alleviate, and Dr. Gray's optimism is in refreshing contrast to such instruction.

The first chapter reviews the anatomy of the brain, as on that foundation the superstructure of neurology is erected. The article is illustrated by well-selected engravings.

The second chapter is devoted to electricity. The author is in error in stating that the positive current flows from the positive plate and the negative current from the negative plate of the battery; the exact converse of this statement is the fact. We do not see why Figure 62 is reproduced as Figure 64 and also as Figure 79, especially as it is nothing but an illustration of a battery table.

The second part of the volume treats of nervous diseases proper. In the article on multiple neuritis we note a typographical error in the statement that Starr's Middleton Goldsmith (there spelled Middletown-Goldsmith) lectures were delivered in 1877; the date should be 1887. We think that there are recorded cases of beri-beri affecting Europeans.

Since the publication of the volume Zambaco Pasha's paper on Morvan's disease has been published. He visited Brittany, investigated Morvan's patients, and concluded that they were affected with anæsthetic leprosy.

We are surprised to note the author's dictum that no case of hydrocephalus has ever been cured.

The author suggests that convulsive tic, or myriachit, be designated as palmus, derived from παλμός, used by Aristotle to designate cardiac palpitation. Echolalie and coprolalie, used by the author, have been Anglicized in echolalia and coprolalia.

There are a few minor errors in the work that are comparatively unimportant and will doubtless receive attention in the next edition. We believe the volume will prove to be quite satisfactory for the purposes for which it is intended.

Holden's Manual of the Dissection of the Human Body. Edited by John Langton, Surgeon to and Lecturer on Anatomy at St. Bartholomew's Hospital, etc. Sixth edition. Revised by A. Hewson, M. D., Demonstrator of Anatomy, Jefferson Medical College, Philadelphia, etc. Three Hundred and Eleven Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1894. Pp. xx-25 to 803. [Price, $3.]

This is an old friend in a new dress. Holden's *Dissector* has been known for many years as one of the best manuals for students' use, deservedly popular because of its pleasant style devoid of cumbrous detail and its simple diagrammatic illustrations. In the present edition many illustrations have been added and the text has been somewhat elaborated. While this results in an improvement in appearance, yet it would seem that in some cases the simple original plan has been lost sight of. Holden's design was not to write an elaborate descriptive anatomy, with artistic illustrations, but to make a book that should excel in simplicity and clearness and at the same time interest the student by a reference to practical points. Some of the older illustrations that are entirely inadequate to the present state of the science—such, for example, as the diagram of the course of the fibers through the medulla oblongata, on page 665—have been retained in the present edition.

The distinction between a dissector, a descriptive anatomy, and a topographical anatomy is not sufficiently borne in mind by those who prepare text-books. A dissector should be a technical manual describing the art of dissection and instructing the student in the preparation and dissociation of structures. It should stop there and leave the description of structures to the larger works, and introducing references to relations only in so far as is necessary to enable the student to understand his preparation. Excellent as this manual is, we believe that a book written with these facts in mind would fulfill all necessary functions in the dissecting room and yet be of not more than one fourth the size.

A Treatise on Ophthalmology for the General Practitioner. By Adolf Alt, M. D. Second Edition, revised and enlarged. With One Hundred and Forty Illustrations. St. Louis: J. H. Chambers & Co., 1893. Pp. xv–330. [Price, $3.50.]

Probably there is no subject in medicine with which the general practitioner is less familiar than with diseases of the eye. Few physicians have the time and opportunity to acquire a thorough knowledge of this specialty, but we believe that a careful reading of such a book as Dr. Alt has written would amply repay any medical man.

The general practitioner is forced to care for certain eye diseases even in large cities, and he should make himself thoroughly competent to treat such cases as do not demand a specialist's skill. Dr. Alt throughout the book has kept the needs of the general practitioner in view.

The directions for examination and manipulation are plain and precise. The diagnosis and treatment of the ordinary diseases of the eye and its appendages are thoroughly but concisely considered, while the complicated operations which only a specialist would undertake are very lightly touched upon.

The volume is written in excellent English and has a very pleasing appearance.

Manual of Bacteriology for Practitioners and Students, with Especial Reference to Practical Methods. By Dr. S. L. Schenk, Professor Extraordinary in the University of Vienna. Translated from the German (by the Author's permission) with an Appendix by W. R. Dawson, B. A., M. D., University of Dublin, etc. With One Hundred Illustrations partly colored. London and New York: Longmans, Green, & Co., 1893. Pp. xiv–310. [Price, $3.]

In the first chapters of this volume the author describes the general morphology and biology of micro-organisms and the apparatus, reagents, nutrient materials, and methods necessary for their cultivation. A chapter is devoted to the microscopic examination of micro-organisms, the principal stains employed to color them, and the methods of determining their characteristics by means of experiments on living animals.

Then the author arranges his material in an excellent way, a chapter being devoted to the bacteriological examination respectively of air, of water, of earth, of food, and of purulent discharges, while four chapters are devoted to the bacteriological examination of the organs and cavities of the body and their contents. In an appendix inoculation against cholera, parasitic protozoa, the action of light on micro-organisms, and some additional methods of technique are referred to.

The various details are described with sufficient fullness but without prolixity, and the book is one of the best working manuals for laboratory use that we have seen. The illustrations are excellent. On page 221 we notice that Pendjah ulcer is called Pende's ulcer.

A Clinical Text-book of Medical Diagnosis for Physicians and Students, based on the most Recent Methods of Examination. By Oswald Vierordt, M. D., Professor of Medicine at the University of Heidelberg, etc. Authorized Translation, with Additions. By Francis H. Stuart, A. M., M. D., Member of the Medical Society of the County of Kings, New York. Third Revised Edition. With One Hundred and Seventy-eight Illustrations, many of which are in Colors. Philadelphia: W. B. Saunders, 1894. Pp. xv–700. [Price, $4.]

The rapidity with which the second edition of this work has been exhausted, a third edition being demanded in less than two years, is evidence that the commendation that we bestowed upon it simply anticipated the professional favor with which it has been received.

The present does not practically differ from the preceding edition, and the translator and author have every reason to believe that the popularity of the volume will continue.

BOOKS, ETC., RECEIVED.

Operative Surgery. By Th. Kocher, M. D., Professor at the University and Director of the Surgical Clinic at the Berne University. With One Hundred and Sixty-three Illustrations. New York: William Wood & Co., 1894. Pp. ix–279.

Treatment of the Diseases of the Stomach and Intestines. By Dr. Albert Mathieu, Physician to the Paris Hospitals. New York: William Wood & Co., 1894. Pp. viii–294.

Holden's Manual of the Dissection of the Human Body. Edited by John Langton, Surgeon to and Lecturer on Anatomy at St. Bartholomew's Hospital, etc. Sixth edition. Revised by A. Hewson, M. D., Demonstrator of Anatomy, Jefferson Medical College, Philadelphia, etc. Three Hundred and Eleven Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1894. Pp. xx–25 to 803. [Price, $3.]

The Physician's Wife and the Things that Pertain to her Life. By Ellen M. Firebaugh. Illustrated with Forty-four Photo-engravings of Sketches from Life. Philadelphia: The F. A. Davis Co., 1894. Pp. xi–186.

Notes on Nursing in Eye Diseases. By C. S. Jeaffreson, M. D., F. R. C. S. E., Senior Surgeon and Honorary House Governor to the Northumberland, Durham, and Newcastle Infirmary for Diseases of the Eye, etc. Bristol: John Wright & Co., 1894. Pp. vi–90. [Price, 2*s.* 6*d.*]

The Nurse's Dictionary of Medical Terms and Nursing Treatment. Compiled for the Use of Nurses, and containing Descriptions of the Principal Medical and Nursing Terms and Abbreviations, Instruments, Drugs, Diseases, Accidents, Treatments, Physiological Names, Operations, Foods, Appliances, etc., encountered in the Ward or Sick-room. By Honnor Morten London: The Scientific Press, 1894. Pp. 139. [Price, 2*s.*]

Some Thoughts on Higher Medical Education and Medical Ethics. By David Cerna, M. D., Ph. D., Texas. [Reprinted from the *Medico-surgical Bulletin.*]

A Case of Ringworm of the Scalp simulating Alopecia Areata. By Henry H. Whitehouse, M. D. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases.*]

The Absorption of Immature Cataract, with Restoration of Vision. By J. Hobart Egbert, M. D., Ph. D. [Reprinted from the *Notes on New Remedies.*]

Hernia and its Mechanical Treatment. By John B. Walker, M. D. [Reprinted from the *Medical Record.*]

The Diagnosis and Treatment of the Early Stages of Chronic Bright's Disease. By Boardman Reed, M. D., Atlantic City, N. J. [Reprinted from the *Medical Record.*]

The Direct Examination of the Female Bladder with Elevated Pelvis; the Catheterization of the Ureters under Direct Inspection, with and without Elevation of the Pelvis. By Howard Kelly, M. D. [Reprinted from the *American Journ of Obstetrics.*]

Electric Illumination of the Stomach. By Julius Friedenwald, A. B., M. D. [Reprinted from the *Maryland Medical Journal.*]

Migration of Syphilis from East Asia into America by Way of the Behring Sea. By Albert S. Ashmead, M. D., New York. [Reprinted from the *Journal of the American Medical Association.*]

Sur l'oblitération congénitale osseuse des choanes. Par A. Gouguenheim et L. Helary. [Extrait des *Annales des maladies de l'oreille, du larynx, du nez et du pharynx.*]

Report of the Eighth Annual Meeting of the Association of Executive Health Officers of Ontario, held at Guelph, June 27 and 28, 1893. Also Index containing Lists of Officers and Contents of Annual Proceedings from 1887 to 1893.

The Demilt Dispensary in the City of New York. Forty-third Annual Report, etc., for the Year 1893, to which is appended Dispensaries, Historically and Locally Considered.

Reports on the Progress of Medicine.

ANATOMY.

By MATTHIAS L. FOSTER, M. D.,
ASSISTANT SURGEON TO THE MANHATTAN EYE AND EAR HOSPITAL.

The Influence of Function as Exemplified in the Morphology of the Lower Extremity of the Panjabi.—The influence exercised by pressure and posture in producing modifications of the skeleton is shown to a certain extent by Charles (*Jour. of Anat. and Physiol.*, October, 1893) in an article with this title. He considers the changes brought about in certain bones of the lower extremity by the squatting posture generally assumed by the Oriental as compared with the form of the same bones in the European. The European sits upon a chair and can assume only at great inconvenience the squatting posture, which is not only customary to the Oriental, but one in which he can sleep as comfortably as in the supine. In this posture the back of the thigh rests upon the calf, the front of the tuber ischii being in close apposition with the heel, the hip, knee, and ankle being in extreme flexion, so the weight of the trunk is supported by the heels. The heels are apart about the distance that separates the ischial tuberosities, and the toes are turned outward. The Panjabi have an upright gait, though the tibia is very materially curved backward.

In the acetabulum the first and most distinctive difference is in the great size of the ischial portion of the facies lunata. The rim of the acetabulum here is very prominent, the groove for the obturator externus being consequently deep. Second, the extension forward and widening out of the lower horn of the facies lunata, whereby the cotyloid notch is, as it were, partly bridged over, instead of being an irregular open space. It looks as if the transverse ligament were ossified on its ischial side. Third, the cotyloid notch, which in the European is as a rule, open, is partially arched over by the forward and upward prolongation of the inferior cornu of the facies lunata. The superficial boundary of the cotyloid notch in the European consists of the transverse ligament alone; in the Panjabi it consists of bone plus the transverse ligament. The vessels entering the joint pass under the bony roof, and not under the ligamentous portion.

The articular surface of the head of the Panjabi femur is of greater extent relatively and absolutely than that of a European bone. The articular area on the former is specially prolonged to adapt itself to the modified facies lunata of the acetabulum during extreme flexion and partial abduction of the hip joint occurring in the squatting posture commonly assumed by the native of India.

The neck of the femur in the Panjabi is longer relatively than in the European.

The upper surface of the internal condyle of the Panjabi femur is partly articular.

The head of the tibia in the Panjabi is set on the shaft very obliquely. A Panjabi tibia can be held by the finger and thumb easily when the internal tuberosity is grasped behind by them.

The upper surface of the internal tuberosity of the Panjabi tibia slopes considerably downward and inward; it is never flat.

The external tuberosity of the Panjabi tibia has its condylar surface convex from before backward, and the articular area is prolonged downward posteriorly.

The upper part of the tibial diaphysis in the Panjabi is commonly directed obliquely backward.

Flattening of the tibial shaft is fairly common. The individuals whose tibiæ were examined were neither hunters nor hill men, but dwellers in the plains. Any degree of platycnemia present could not, therefore, be due to the causes generally assigned.

A facet upon the anterior surface of the inferior extremity of the tibia was usually present for articulation with a like surface on the neck of the astragalus.

The facets upon the anterior inferior surface of the tibia and on the neck of the astragalus come into apposition during extreme flexion of the ankle joint in the squatting posture.

In more than seventeen per cent. of the tibiæ examined a second facet in a more internal position than the one mentioned on the anterior surface of the inferior extremity of the tibia was present and articulated with an anterior prolongation of the trochlear surface of the astragalus upon the upper portion of the neck of that bone. This facet has not been found when the external one was absent.

The Panjabi astragalus differs considerably from the European. There is a facet on the upper surface of the neck to the outer side and there is a facet on the same surface more internally, which is continuous posteriorly with the trochlea and internally with the pyriform malleolar articular area. This pyriform articular area on the inner surface is generally greatly prolonged forward, and, when that is the case, it is concave from before backward. The outer facet alone or the inner one alone may be present. The greatly elongated pyriform facet on the internal surface may be the only distinctive characteristic. The presence of the last-mentioned area renders the sartorial posture easier.

The resemblances between the osteological remains of the lower extremities of prehistoric man and those of savage or Oriental races of the present day may be due to the influence of common habits. It is highly probable that all the foregoing peculiarities are acquired; but that heredity has no influence has yet to be proved.

Double Monstrosity.—Windle (*ibid.*) summarizes his views thus:

1. The cause of double monstrosity is a superfluity of germ plasm (determinants) existing in the germ.

2. This superfluity of germ plasm leads in the case of true double monstrosity to a fission which is prior to that by which normal development is commenced.

3. The superfluity may possibly be traced to—

(*a*) The retention of superfluous germ plasm, owing to a faulty segmentation of the polar bodies.

(*b*) The introduction of superfluous germ plasm, from faulty segmentation in the formation of the spermatozooids.

(*c*) The introduction of superfluous germ plasm by the entrance of more than one spermatozooid into the ovum.

4. The amount of duplicity depends upon the number of superfluous determinants retained in or introduced into the ovum.

5. In homotopic redundancy the superfluous determinants follow the normal track in development; in heterotopic, an abnormal one.

6. It is possible that absence of normal determinants may coexist with the presence of abnormal ones in the same germ.

7. In the case of parasites, degeneration may be an additional factor in the production of the condition.

8. Excess of growth without superfluity of parts depends upon different causes from those which produce double monstrosity.

A Left Vena Cava Inferior.—Waring (*ibid.*) gives the following description of a vena cava inferior found in a female subject in the practical anatomy room of St. Bartholomew's Hospital:

"The inferior vena cava is formed by the junction of the two common iliac veins in front of the middle of the body of the fifth lumbar vertebra and somewhat to its left side. The point of union lies directly behind the left common iliac artery and about an inch below the division of the abdominal aorta. The right common iliac vein is formed by the junction of the right internal and external iliac veins just external to the sacro-iliac synchondrosis of that side. This vein lies behind the right internal iliac artery at its commencement, then to the inner side of the right common iliac artery, passing obliquely upward and across the right extremity of the sacral promontory to the lower part of the body of the fifth lumber vertebra, until it reaches the level of the middle of the body of this vertebra. At this point it passes to the left side of the middle line, lying behind the left common iliac artery and joining its fellow of the opposite side. The whole course of this vein measures two inches. The left common iliac vein commences behind the bifurcation of the left common iliac artery and in front of the left sacro-iliac synchondrosis by the union of the left internal and external iliac veins. The vein passes vertically upward, lying upon the left side of the body of the fifth lumbar vertebra. At its commencement it lies behind the artery, but in its course upward it immediately passes to its outer side, and when it is joined by the corresponding vein of the right side it is completely to the left of the artery.

"The inferior vena cava thus formed passes vertically upward for two inches. It is then joined on its left side by the left renal vein. In this part of its course it lies upon the fronts and left sides of the bodies of the fifth, fourth, and third lumbar vertebræ; to the right is the abdominal aorta, and to the left the left psoas muscle. Opposite the middle of the body of the third lumbar vertebra the left ovarian vein joins the inferior vena cava on its anterior surface.

"After receiving the left renal vein it passes obliquely across the anterior surface of the abdominal aorta to the right side of that vessel, and then lies upon the crus of the diaphragm. The oblique part, at its commencement, lies opposite the upper part of the third and the lower part of the second lumbar vertebræ. This oblique part measures an inch and a half in length. The right inferior angle of the oblique part is joined by the right renal vein, into which opens the right ovarian vein. Beyond this point the vena cava passes vertically upward to pass through the vena caval aperture in the diaphragm and join the right auricle. This portion measures three inches and a half in length. The other tributaries have their normal distribution, the azygos veins are normal, and there is no transposition of the viscera."

This unusual position of the vena cava Waring ascribes to faulty development. He adopts Hochstetter's view in regard to the development of the vena cava, and then explains the condition found as follows:

During development the lower abdominal portion of the right cardinal vein had either not been formed or had become obstructed. The pelvic communication between the posterior portion of the two cardinals had been established and persisted as the portion of the right common iliac vein which lies upon the body of the fifth lumbar vertebra. The left cardinal vein in the lower part of its extent had become much dilated, and formed the portion of the inferior vena cava below its junction with the left renal vein. The oblique portion which crosses over the anterior surface of the abdominal aorta had been developed from a dilatation of the anastomosis which is formed between the upper portion of the inferior vena cava and the left cardinal vein. The upper vertical portion had been formed by a dilatation of the small unpaired venous stem which appears in the tissue lying between the two primitive kidneys.

The Appendix of the Testicle.—Griffiths (*ibid.*) gives the following description of the little body situated on the upper and front part of the body of the testis, just in front of the globus major, which was first noted by Morgagni and is known as a hydatid. In the young it is a flat, tonguelike process, with a wrinkled or corrugated surface, hanging into the cavity of the tunica vaginalis, and having a flat, bandlike attachment at its base to the tunica albuginea of the testis, through which a few blood-vessels may be seen running into its substance. It measures from a sixth to a third of an inch or more in length. In the adult it may be of the same size as in the infant, or it may be so shrunken as to be hardly recognizable. It may be globular and firm, reduced to a mere stump, or altogether absent.

Microscopically, it consists of a process of fibrous connective tissue, which arises at right angles from the surface of the tunica albuginea and is directly continuous with the superficial layer of that tissue. In this connective tissue are many large blood-vessels proportionately to the structure itself. The surface of the appendix is wrinkled or thrown into irregular folds, and is covered by a single layer of subcolumnar cells, which rest on a basement membrane formed by condensation of the outermost layers of the connective tissue which constitute the substance of the body and are directly continuous with the flat endothelial cells lining the tunica vaginalis and covering the tunica albuginea, the transitional forms from the columnar to the flat variety being seen where the appendix joins the tunica albuginea. In no instance have any glandular tubules or any remains of true epithelial cells been found in the interior of this body.

In the adult the appendix is usually reduced in size, but may sometimes be found large and globular, owing to an increase of its fibrous connective tissue and the formation of cystic dilatations, which are dilatations of lymph spaces and not the result of distention of pre-existing gland tubules. The epithelium on its surface in all cases retains its subcolumnar shape, and shows no tendency to become flattened.

Cysts of the Epididymis.—The same author (*ibid.*) groups the cysts met with in the upper end of the epididymis under three headings—

1. Small, pedunculated, and sessile cysts destitute of spermatozooids, so-called hydatids, which arise between the tubules.

2. Single spermatozooid-containing cysts which arise from localized dilatations of the tubules.

3. Multiple spermatozooid-containing cysts involving, as a rule, the tubules in one or more lobules (coni vasculosi).

The first class, small, clear, and translucent, are very frequently found in men beyond the age of forty years, occasionally in earlier life. They rarely exceed a quarter of an inch in diameter, though they may be of twice that size. Microscopically, they consist of a distinct cyst wall with an epithelial lining of non-ciliated columnar cells resting directly upon it. The cyst wall is composed of a thin layer of spindle cells resembling unstriped muscle fibers, together with a small amount of fibrous connective tissue. The fluid they contain is clear and watery, slightly albuminous, with numerous granules, a few cells with large nuclei, and granular protoplasm, but no spermatozooids. No connection can be traced between these cysts and the tubules of the epididymis beyond the fact that they take origin from among them. Griffiths considers that they originate as outgrowths or buds from the sides of the tubules, early lose their connection with the tubules, and so do not contain spermatic fluid, but simply a serous fluid, probably secreted by the columnar cells lining their walls.

The second class of cysts is not infrequently met with in men above forty years of age. They vary from a quarter of an inch to an inch in diameter, are in part imbedded in the substance of the epididymis, are composed of very thin walls, and contain a thin watery fluid in which numerous spermatozooids may be found, but usually only a small percentage of albumin. Lining the cyst wall is a single layer of non-ciliated, columnar epithelial cells, shorter and smaller than those lining a normal tubule. Sometimes such a cyst may be found with a thick wall and with the interior filled with a yellowish granular substance composed of cells, *débris*, and heads of spermatozooids. The structure of the walls of the cysts of this class, their epithelial lining, their situation, their contents, and the fact of their communication with the tubules of the epididymis, all appear in favor of the cysts being simply dilatations of the tubules in a given conus vasculosus. In short, they are retention cysts.

The third class, also found in men above forty, is cystic dilatation of a tubule in one or more of the lobules. These cysts are usually very small and numerous. The tubules, or portions of them, are dilated to several times their natural size, and as the dilatations increase they become more and more pressed together, and the intertubular connective tissue becomes less in amount, denser, and more fibrous. The wall of each cyst consists of a thin muscular coat, which is the flattened-out, thick muscular coat of the normal tubule. Each cyst is lined by a single layer of columnar, non-ciliated, epithelial cells, not so large as those found in the natural tubule. The cavity is occupied by numberless spermatozooids and a few large round cells.

Variations in the Position and Development of the Kidneys.—Brown (*ibid.*, January, 1894) classifies the abnormal conditions met with in the kidney under seven headings:

1. Kidneys normal in position and size, but altered in form.
2. Kidneys normal in position, but altered in relative size.
3. Variations in number.
4. Variations in position—*i. e.*, displacements.
5. Malformations.
6. Variations of the ureters.
7. Vascular abnormities.

Slight changes in form are not uncommon. The kidneys may be longer or broader than usual, sometimes approach the more globular fœtal condition, and sometimes are discoid. Distinct lobulation is extremely rare.

The relative difference in the size of healthy kidneys is, he thinks, commoner than is generally supposed.

Absence of both kidneys must be exceedingly rare. Cases have been noted, but life must be impossible after a very few days. Cases of single kidney, by which the author means only those in which one organ is congenitally and entirely absent, are also very rare. Alterations in form are not very common. The kidney rarely occupies an unusual position, though it has been found in the iliac fossa, and also higher and nearer the mesial plane than usual. The left kidney is more commonly absent than the right. In some cases no trace of a ureter corresponding to the missing kidney could be found; in others a rudimentary ureter was present. The adrenal body on the side upon which the kidney is present is usually normal in size and position; the position of the opposite one seems to vary somewhat, but it is practically always present, and lies usually in its normal position, though it may be somewhat altered in form. Congenital defects in other organs are exceedingly common. Beumer maintains that congenital defects and anomalies of the sexual organs ought to suggest the probability of congenital alterations of the kidneys. The absence of one kidney is found much more frequently in males than in females. As to the cause, the suggestion is made that the absence or small size of an artery at whose termination a viscus is developing or is about to form must play an enormously important rôle in the maldevelopment of that viscus. It does not seem to influence the duration of life, and is not unknown among the lower animals. Supernumerary glands—*i. e.*, more kidneys than two—have been described in a few instances only. The supernumerary glands were then placed either near the two other kidneys or elsewhere in the abdomen or pelvis. Each one possessed a distinct ureter.

Displacements are much commoner than is usually believed. The author classifies them in three groups: Fixed displacements, where the mobility is always less than an inch in any direction; movable kidney, where the mobility exceeds an inch, where the organ is mobile in its relaxed adipose capsule or between the muscular wall of the abdomen and the peritonæum; and floating kidney, where the kidney has a mesonephron and floats in the peritoneal cavity. Slight displacements are very common. Dislocation is usually confined to one kidney, commonly the left. The displacement may be upward, so the organ may be higher than the spleen and push the diaphragm upward; it may be toward or from the mesial plane of the body, but usually it is downward, and the organ may lie in the iliac fossa, over the sacro-iliac joint, near the aortic bifurcation, or at or within the pelvic brim. It may be fixed beside the uterus, or lie between the rectum and bladder, and give rise to various troubles. A misplaced kidney has caused an obstacle to parturition, has been known to obstruct the bile ducts, and has simulated aneurysm. Movable kidney is commoner in women between twenty-five and forty years of age, and the right kidney is usually affected. Much has been said about its causation, but probably laxity of the abdominal walls and peritonæum is the most important factor. Floating kidney is very rare.

Fusion of the two kidneys the author classifies under malformations. All degrees of fusion have been found, from the horseshoe form to the most complete incorporation. The malformed double organ may lie in or near the mesial plane of the body, in the lower lumbar and iliac regions, or in the pelvis. The horseshoe form is the commonest, and occurs once in sixteen hundred cases. The other fusions are said to be present only once in ten thousand cases. In all forms two ureters are present.

It is fairly common to find the ureter on one or both sides double, but it always becomes single before it reaches the bladder. The extent of the doubling varies from a few inches to nearly its entire length. One case is recorded of a double pelvis and ureter.

The common irregularities in size, number, position, and source of the renal vessels have often been described.

Retained Testis.—Griffiths (*ibid.*) concludes: 1. The retained testis in man and in the domesticated animals is of small size, and the seminal tubules, though smaller, are more distinct, owing to the disproportionate amount of intertubular connective tissue.

2. The walls of the tubules are thick from the formation of fibrous tissue on the inner surface of the tunica propria; the epithelium is scanty and columnar, and there are no traces of spermatogenesis.

3. The testes in cryptorchids, though they are incapable of producing spermatozooids, are yet capable of exerting that influence which the natural testes exert upon the development of the penis and the growth of the body.

4. The function of the testes—namely, that which influences the growth of the body at puberty—is distinct from that of the production of spermatozooids, and the latter requires a more specialized development of the tubules of the gland than the former.

5. The testes do not acquire their full (spermatozooid-producing) function except at the farthermost point of descent from their primary position.

The Testes and Prostate Gland in Eunuchoid Persons.—The same author (*ibid.*) thus concludes a paper on this subject:

1. In eunuchoid persons the testes are of small size and almost entirely composed of fibrous tissue, the seminal tubules being represented by fibrous rods with fissurelike lumina containing atrophied epithelial cells. Although thus altered, the testes retain their normal shape and form.

2. The epididymides are large relatively to the bodies of the testes, and the tubules in most of the lobules of the globus major are natural, the tubules in some few lobules being altered as if by chronic inflammation.

3. The prostate gland is small, tough, and fibrous, and the glandular tubules are few in number and but imperfectly developed. The vesiculæ seminales are also of small size and devoid of any secretion in their interior.

4. Where the testes lose their power of growth, from whatever cause, the individual develops at puberty like a eunuch deprived of his testes in early life. Such a person the author, therefore, calls a eunuchoid.

Hermaphroditismus Transversus Virilis.—The same author, in the same paper, describes a very interesting case. The patient was twenty-three years old, and had never menstruated or had vicarious menstruation. The breasts and the mons Veneris were well developed. The vagina formed a blind sac two inches deep. The uterus was apparently represented by an elastic body of the size of a broad bean, lying rather to the right. In each labium majus there was an ovarylike body. These bodies were very tender and caused great pain; they were therefore removed. Careful examination showed that they contained tubuli seminiferi, and not Graafian follicles, and were distinctly testicles. There were vessels arranged like the spermatic and distinct cremasters, but no vasa deferentia. Perhaps, as Kochenburger suggests, they existed, but were cut too close at the operation to be recognized.

Miscellany.

The Causation of Tetanus.—In the January number of the *Revue de médecine* M. J. Courmont and M. M. Doyon give a review of the most important of the recent contributions to the literature bearing upon the ætiology of tetanus, of their own previous articles on the subject, and of subsequent experiments which they have performed. They are led to the view that the micro-organism of tetanus acts not by its toxic properties, but by giving rise to a fermentation which engenders a toxic product. The article does not readily admit of condensation. The conclusions reached are thus expressed: 1. The bacillus of Nicolaïer engenders tetanus through the instrumentality of a soluble ferment which it gives rise to. 2. This ferment, which is not poisonous of itself, elaborates, at the expense of the organism, a substance which is directly tetanizing, producing effects comparable to those of strychnine. 3. This latter substance is found in abundance in the muscles of those affected with tetanus; it exists also in the blood and sometimes in the urine. 4. It resists prolonged boiling, but the bacillary products are rendered inert by heating to 149° F. 5. It requires for its formation favorable conditions of temperature. Thus is explained the immunity of the frog in winter. 6. Natural or acquired immunity may be considered as the result of causes which prevent, retard, or arrest the fermentation above referred to. 7. It is probable that other microbian substances called toxic likewise act as soluble ferments to produce toxic substances at the expense of the organism.

Fevers without Fever.—Such attacks, says a correspondent of the *Journal des praticiens* for February 7th, have been noticed before now, especially in scarlet fever, malarial seizures, and typhoid fever, running their course with a subnormal temperature. Influenza presents this abnormal occurrence, as M. Teissier, of Lyons, has often proved. He it is who has now drawn the attention of one of the societies to pneumonia running its course without fever. A patient in his service at the Hôtel Dieu complained of all the symptoms of pneumonia, but the temperature remained low, almost subnormal, and did not begin to rise until about the sixth day—*i. e.*, at the time when the convalescence began. From this time on the thermometer remained above normal. This is the course of temperature which M. Potain has noticed in an apyretic form of typhoid fever. To interpret facts of this sort, it has been imagined that there might be secreted by the germs pathogenic products that were sometimes pyretogenous and sometimes refrigerant, and in support of this idea reference has been made to Roux's and Pittion's experiments in injecting the urine of influenza patients into animals, those of Rodet and Coumont with the products of the staphylococcus, and those of Charrin, Gilbert, and Boix with those of the *Bacillus coli* and of Eberth's microbe. Such an explanation is not wholly satisfactory to M. Teissier. He thinks it more probable that this reduction of temperature is due to the retention of products of cellular nutrition under the influence of the action exerted by the infectious germs. He compares these occurrences to those which rheumatic and gouty persons experience after overeating or exposure to cold and dampness (lassitude, local congestions, and heat of the skin, but with a reduction of the temperature below normal). A practical remark remains to be made. In these cases M. Teissier employs quinine, and that drug raises the temperature. This has the appearance of a paradox, since no reason can be given for it, but it is none the less real and practically useful. At all events, adds the correspondent, clinicians can not be too much encouraged to give attention, as M. Teissier has done, to instances of the sort.

A Fatal Case of Acute Parenchymatous Nephritis Consequent on Impetigo.—In the February number of the *Revue mensuelle des maladies de l'enfance* there is an abstract of an account of such a case, by Dr. Pietro Celoni, published in the *Archivio di pediatria* for July, 1893. It appears that several cases of nephritis consequent upon eczematous or impetiginous eruptions have been observed by the Italian physicians. Guaita, Canali, Felici, and Rigoli have published pretty conclusive examples of inflammatory affections of the kidneys consecutive to more or less extensive cutaneous diseases. Some see only a coincidence between the nephritis and the skin disease; others take the former as dependent on the latter, and think that the agents which give rise to the nephritis must have penetrated through solutions of continuity of the skin. The particular case related by Celoni was that of a boy five years and a half old. It ran its course in four days and ended in death with all the symptoms of acute parenchymatous nephritis. The child had been attacked with impetigo three weeks before. The bacteriological examination was negative, so the case is not wholly cleared up.

The Medical Society of the State of Pennsylvania.—At its last meeting the society appointed—under the provisions of a by-law proposed at Harrisburg and adopted at Williamsport—a committee on scientific business, "to secure scientific papers and to provide scientific discussions for each annual meeting, and to co-operate with the committee of arrangements and credentials in arranging the programme." The members of this committee are Dr. Dulles, of Philadelphia; Dr. Gorgas, of Harrisburg; Dr. Le Moyne, of Pittsburgh; Dr. Tyson, of Philadelphia; and Dr. Towler, of Marienville. The object of this change in the law is to have a permanent committee which, becoming familiar with the subject, shall find it easier to secure good scientific work than is possible for a committee that is appointed new every year. The committee on scientific business is working in conjunction with the committee of arrangements, of which Dr. E. E. Montgomery is chairman, and will co-operate with it in arranging the programme. The committee, in a circular dated February 15th, expresses the hope that each member of the society will aid it in attempting to make the meetings of greater scientific importance than they have been in the past. To this end the committee will welcome suggestions from any member of the society and especially, at this time, offers of contributions to the work of the next meeting, at Gettysburg, May 15th to 18th. It is desired that there should be as many brief, concise, practical papers as possible, and it is proposed to have a discussion on tuberculosis, devoting the morning to medical tuberculosis and the afternoon to surgical tuberculosis. Any communication from members of the society in regard to the work of the committee will be welcomed by it. Members of the society desiring to read papers or to take part in the discussion on tuberculosis are asked to notify the chairman of the committee, Dr. Charles W. Dulles, 4101 Walnut Street, Philadelphia.

The New York Academy of Medicine.—The special order for the meeting of Thursday evening, the 1st inst., was a paper by Dr. A. M. Phelps, entitled Pott's Disease of the Spine; its Early Symptoms and Diagnosis; Spinal Supports, their History and Growth; Treatment, Surgical and Medical.

At the next meeting of the Section in Public Health, Legal Medicine, and Vital Statistics, on Wednesday evening, the 7th inst., Aaron M. Powell, Esq., will read a paper entitled The Question of State Regulation of Prostitution.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 8th inst., papers on Bronchitis in Infants and Children will be read by Dr. A. Reich, Dr. Charles G. Kerly, and Dr. Henry Koplik.

At the next meeting of the Section in General Surgery, on Monday evening, the 12th inst., Dr. C. N. Dowd will read a paper entitled Considerations on Different Types of Surgical Inflammation, based on Bacterial Examinations in 125 Cases; and Dr. Willy Meyer will read one on Practical and Efficient Sterilization of Materials for Private Operations.

At the next meeting of the Section in Genito-urinary Surgery, on Tuesday evening, the 13th inst., a paper on Posterior Urethritis will be read by Dr. F. Tilden Brown, and one on Periurethral Phlegmon near the Frenum by Dr. R. Guiteras.

The External Use of Guaiacol.—In the *Province médicale* for February 3d there is an article on this subject of which the following is the substance: This procedure, which was used by Sciolla and Bard, has for some time been employed as an antithermic. It consists in painting the greater part of the exterior wall of the thorax, and sometimes the forearms, with pure guaiacol. According to different authors, the doses are variable, ranging from one or two cubic centimetres up to seven or eight. There is a difference of opinion as to the employment of this liquid. Sciolla, Bard, and other physicians use pure guaiacol, while others, like Desplats, mix it with glycerin or alcohol. In several case of advanced phthisis, a marked reduction of 2° has been obtained by painting the entire surface of the front of the thorax with pure guaiacol. Unfortunately, the effects of this treatment are only temporary, not lasting more than three or four days. Sometimes, also, applications of this kind produce a marked rise in temperature—in one case of 2°. It is necessary, then, in making use of this procedure to ascertain the susceptibility of the patient, and to use at first small and then progressively large doses. There have been of late years interesting attempts in the employment of this procedure. Casasovici and Miron Sigalea have used guaiacol mixed with tincture of iodine, in the treatment of pleurisy, in the following proportion: Tincture of iodine, three hundred and eighty-five grains; guaiacol, seventy-five grains. This quantity is used in a single application, and the diseased parts are thoroughly and extensively painted with it every night. These applications cause a considerable reduction of temperature, profuse perspiration, and an increased flow of urine, followed soon after by complete resorption. These results seem to have been obtained, particularly in one case, where there was abundant pleuritic effusion on the left side, in which tapping had not been followed by any relief, but had caused a considerable rise in temperature, by the application of iodized guaiacol, the fever disappearing in a few days and the effusion becoming resorbed.

M. Desplats has recently conceived the idea of applying guaiacol in the treatment of painful rheumatic inflammation of the joints, after having observed a case in which applications of guaiacol had been used with excellent results. He has used a mixture of equal parts of guaiacol and pure glycerin. The joints were thoroughly painted with this mixture and afterward covered with a dry dressing. In one case of acute rheumatism and in three others of arthritis deformans with sharp pains, the results were excellent. The pain was completely subdued, and in the first case the patient recovered rapidly. This procedure has recently been employed in applying guaiacol for articular neuralgia of the shoulder, which was very painful, in a tuberculous patient, who experienced marked relief. It is easily employed and not dangerous if the indications mentioned are conformed to.

The Dose of Atropine.—The *Journal de clinique et de thérapeutique infantiles* remarks that atropine should not be used internally in children under fifteen months old. Of a 1-to-1,000 solution of the sulphate in distilled water, from two to five drops may be given in the course of twenty-four hours to a child between fifteen months and three years old, from five to ten drops to a child between three and five years old, and from ten to twenty drops to one between five and ten or twelve years old.

Lectures and Addresses.

MODERN EXPERIMENTAL MEDICINE.

ANNIVERSARY DISCOURSE,
NEW YORK ACADEMY OF MEDICINE,
November 29, 1893.

BY WILLIAM H. THOMSON, M. D., LL. D.,
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MR. PRESIDENT, FELLOWS OF THE ACADEMY, LADIES AND GENTLEMEN: No physician who has lived long enough in the practice of his profession to compare the state of medical knowledge and of opinion as it was twenty-five years ago with the same at the present day can fail to recognize the fact that in both a virtual revolution has characterized the interval. This change is not simply from increase of knowledge, great as that has been, but more from change of methods in the pursuit of knowledge, with the result of altering the whole domain of medicine to an extent which only the term revolution can fully express. It happens, however, that, as in other revolutions, many who live in their epochs, and who even may take part in them, yet fail to appreciate at the time their full significance, and therefore remain long unaware of the essential difference which separates the new order of things from the old. With a view, therefore, to illustrate the import of the new era which is now fully upon us, I would briefly refer to the chief methods of inquiry and of investigation which were pursued by the medical profession a quarter of a century ago, and then compare them with the experimental medicine of to-day.

First of all in the estimation of the profession at that time came clinical medicine, or the knowledge that could be gained of disease at the bedside of the sick. To be able to investigate disease to good purpose when face to face with it required no small preparation on the part of the physician. For that preparation anatomy was the first lesson, and no complaint can be made that this essential prerequisite to any true medical science was then, or ever has been, underestimated. No sooner, in fact, was the microscope put within reach than everywhere workers set themselves to extend our knowledge of the structure of living tissue, until the vast field of histology, or the ultimate anatomy, as it may be termed, was explored in every direction, with the most fruitful results, though thereby more than doubling the amount of study now required for even ordinary medical equipment, compared with that of previous generations. With each advance in knowledge of structure it was to be expected that similar gains would be made in knowledge of function or working, and physiology accordingly kept even pace with anatomy both in the extent and suggestiveness of its discoveries. But life has also its own chemistry, and no charge can be made against the profession that it failed to recognize the importance of that great science in its relations to health and to disease.

With as perfect qualification in these respects as the student could obtain, diseases then came to be studied in works treating of their general and of their specific forms, or their natural history, so to speak, as revealed in their symptoms, course, and terminations. Finally, to complete this came the great science of pathological anatomy. From ancient times it has been felt that death by disease had many explanations to offer for itself in the records which it leaves of its ravages in the body, and no one can speak too highly of the patience and skill with which unnumbered scientific men in our profession have labored to trace the minutest steps of deviation from healthy structure which the post-mortem table can reveal, and to determine their relation to morbid processes before death.

With all these requisites mastered, clinical observation began. For this also a special training was needful. After an inquiry into the history of the patient, involving often a cross-examination as special in its way as that of a skillful lawyer, though as far as possible from a lawyer's usual intentions, the clinician begins to observe for himself. The great physicians of antiquity admirably had paved the way by showing how much the eye alone could note in disease, and it would be well for us in this generation to go back to those old masters for many a now too often neglected lesson. But modern research has added the accurate sense of hearing in the methods of percussion and auscultation, and refined many of the applications of the sense of touch, and finally called in the invaluable aid of chemistry and of the microscope for the examination of the secretions—all to guide the medical man up to the point when he will show what his own mind is capable of toward correctly estimating the relative importance of each, among often a wonderful complex of details.

Now why is all this not enough? Why is this trained investigation of disease, with all its helps for the interpretation of its manifestations or of its issues, whether in recovery or in the anatomical changes shown by autopsies, not sufficient to advance medical knowledge until every serious problem of medicine be solved? The answer is that by none of these methods can the vital question of ætiology, or the causation of disease, be answered with anything like a satisfactory demonstration, owing to the absence of one great requisite in all scientific demonstration—namely, experiment. In no scientifically conducted investigation is observation alone sufficient. Observation never can be safely interpreted except by testing. All interpretations of observations remain mere theories until they are experimentally tested. But observing over and over again is not testing; it still remains observing. How deficient, therefore, both clinical medicine and pathological anatomy may be in securing the final interpretation of disease one example will suffice to illustrate:

No malady has been more thoroughly studied, either at the bedside or post mortem, than pulmonary consumption. Both its distressing clinical features and its fearful mortality furnished the strongest incentives for its exhaustive investigation, while its chronic course gave ample time to note everything connected with its development. For centuries, therefore, it has been closely watched, till not one of the minutiæ of its characteristics escaped observation.

But to what conclusive results did all this clinical and anatomical study attain? Not to go back too far, I remember a sagacious and acute observer among my teachers eloquently advocate the view of *his* great teacher, Laennec, that tuberculosis was a constitutional tissue degeneration, so hereditary, therefore, that, as my professor expressed it, it began in the ovary of the mother. But whereas Laennec said in 1819, and said rightly, that the existence of tubercles in the lungs is the cause, and constitutes the true anatomical character of consumption, the eminent German teacher, Niemeyer, in 1867, said wrongly that tubercles had no causative connection with phthisis, and when found in the lungs after death they were inflammatory products of recent origin which only complicated the disease after it was already in an advanced stage. Louis, the successor of Laennec, and his followers taught that the yellow or cheesy masses of degenerated tubercles were the true tubercles, and were deposited as such from the blood. Virchow, on the other hand, came near denying that cheesy deposits in consumptive lungs had anything to do with tubercle.

Now, no one can allege that these distinguished men whom we have mentioned were either incompetent clinicians or pathologists. Can any better than they be expected in the future? If not, then how long would the profession have had to wait for a final agreement among such authorities on this subject? From what has developed since, the answer would be, Forever. Far as clinical observation can go, it could never have shown the cause of consumption on a wall, or have forbidden floor sweeping on account of it; and as to pathological anatomy, while we think Sir Andrew Clark's remark much too sweeping which he makes in his last published lecture on fibroid phthisis—viz., that "the anatomical structure of a morbid product can *never* be made the true criterion of the disease which produces it"—yet pathological anatomy had been given as full time and opportunity as clinical observation to discover the true ætiology of phthisis and had equally failed.

The first real advance toward the solution of the problem was made, as is well known, by Villemin in 1865, when he startled the medical world by announcing what was really a confirmation of a forgotten experiment made as far back as 1843—viz., that tuberculosis could be caused in perfectly healthy animals by inoculating them with tuberculous matter from persons sick with consumption. Experimenters in all countries speedily confirmed this epoch-making discovery. But upon this followed a crowd of most puzzling reports of experiments, which, however, most instructively illustrate the intrinsic excellence in the long run of the experimental method, for at first it seemed as if the experimental investigation of the nature of tuberculosis was going to lead to greater confusion than ever. Dr. Burdon Sanderson found that he could produce tuberculosis in animals by inoculating them with pus taken from pyæmic patients, or even after the mere introduction of a clean seton of unbleached cotton. Dr. Wilson Fox did the same in guinea-pigs by inoculating them with vaccine lymph. In Germany, Cohnheim and Fraenkel also succeeded in producing tuberculosis by introducing all sorts of things, from pieces of healthy muscles to bits of charpie or gutta-percha. The inference, therefore, seemed justifiable that anything which artificially produced an inflammation could give rise to tuberculosis, much to the delight of Niemeyer. Ere long, however, it was discovered that it altogether depended upon *where* the animals were at the moment they were experimented upon whether they became tuberculous or not. If they were taken out of cages or rooms in which other animals had died of tuberculosis and were then wounded, especially with instruments which had been used on tuberculous subjects, they contracted tuberculosis, no matter what was used. But if precautions were taken against any contamination of the kind with tuberculous matter, then they never became tuberculous until they were inoculated with actually tuberculous material. On the announcement of this fact by Klebs, one by one of the other experimenters mentioned repeated their experiments and finally acknowledged that Klebs was right, until a general agreement was reached, as demonstrated by experiment, that tuberculosis is a specific infectious disease which never occurs in an animal body except it comes from a previous case of tuberculosis.

We have said that this history illustrates the intrinsic excellence of the experimental method, for while at first, in this instance, it scarcely seemed to settle anything, it finally did settle what it set out to do conclusively. This the experimental method does by providing by its own laws for the correction of its own mistakes. Mistaken experiments, unlike mistaken doctrines, are always short-lived, and we commend this fact to all those who dwell upon the contradictory reports of experimental investigation in many questions now before the medical world, as if certainty can never be thus reached. From its very nature, the experimental method gets at its hid treasures by no lucky find in the field, but only by the slow approaches and perfecting which mark every human invention, taught often as much by failure as by partial success, and content with nothing short of complete solution. The reason of this last characteristic is that the solution is never left to one person or judge. Every claim of the kind is passed upon by a very large jury of experimenters in all civilized countries, each one of whom tests the solution by experimenting upon it himself. Only what is true, therefore, can survive such an ordeal.

But to return to tuberculosis. Experimental medicine could not stop with the confirmation of Villemin's discovery. One discovery made, urgently called for a further discovery. As tuberculosis is an infectious disease, what is the infecting agent? Among the many who set themselves to answer this question, it fell to Robert Koch to make the identification, by the strictest rules of experimental investigation, which, as he formulated them at this crisis in his own personal history, illustrate the noble quality of scientific conscience quite as strikingly as his work did that of scientific skill. No investigator, he said, can profess to have demonstrated the causative connection between an observed element in a disease, when it is a micro-organism, and the disease itself—

1. Unless the micro-organism is present in all cases of the disease in question.

2. It must be present in this disease and in no other.

3. It must be found in such quantities in the infected body that all the symptoms of the disease may be clearly attributable to it.

4. It must be capable of isolation from the infected body and of being separately cultivated where it can not be confounded with any other micro-organism.

5. These artificially-grown colonies must then be capable of reproducing themselves in animal bodies after inoculation with them.

6. They should then cause just the same disease in symptoms and in anatomical changes as the original growth.

Now, these rules plainly imply that all experimental investigation into the facts of life and of disease is beset with fallacies—fallacies partly inevitable, and partly due to the natural eagerness of inquirers to make striking discoveries. But by such rules an effective check is imposed from the first upon any straying from the path of testing and of retesting. The experimenter has to stop and wait for five other corroborations of his first experiment ere he can certify demonstration. Then at every step he must report, not his views or his conclusions, but instead fully detail his methods of working. Room for views or opinions there is little or none. From first to last nothing is considered but questions of fact.

It is well that this should be so, for when these demonstrated facts were first reported about tuberculosis, owing to their extraordinary and well-nigh unimaginable character, they would have met with nothing but general incredulity were it not that all evidence, when it is fully certified by experiment, is simply resistless. A lung stuffed with tubercles must swarm indeed with Koch's bacilli when, according to Bujwid's estimate, 5,000,000,000 of them can enter a drop of water. Still, minute as they are, they are not dissolved in it, for they can all be filtered out of it as so many solid particles. Moreover, a whole series of facts have been further demonstrated about them which it is of supreme importance for us to know. First, they are living things, with as definite a life history as other living things. They can be cultivated in or on different media outside of the body, and generation after generation of them can so be raised, with full opportunities thus given for watching all their facts of growth. Koch still keeps propagating in his laboratory cultures descended from the first which he planted in 1881, just as a farmer might do with his different kinds of grains and thus know the difference between them when grown on this soil or on that. Thus it seems that the range of temperature under which they will grow is more restricted than with other micro-organisms—37° to 39° C. being the best. Nevertheless, they are not killed by freezing any more than winter-sown wheat. On the other hand, whereas the cholera bacilli are quickly destroyed by drying, tubercle bacilli will retain their vitality in dried sputum for nine to ten months; hence the deadly peril from the dust of rooms in which consumptives have carelessly expectorated. Moreover, these bacilli have great powers of resistance against certain germicides which are promptly fatal to other bacteria. They are not destroyed by the gastric juice, and hence, when taken in meat or milk, will pass on to invade the system through the abdominal walls. Nevertheless, they are extremely susceptible to direct sunlight, which kills them in a few minutes, and even in the diffused light of a room with good windows they will die in six to seven days. We need not fear, therefore, the consumptive's expectorating on the sidewalk, however careful we should be about him indoors.

Already, therefore, we are in possession of such priceless information as this: First, that this fell destroyer of the human race is a preventable disease, and therefore we may confidently look forward to the time when, instead of its being one of the commonest causes of death, it will become as rare as leprosy is now. Even now, through the exertions of Koch, Cornet, and others, the German public is becoming aware of the need of disinfecting, as they recommend, all articles likely to be contaminated by phthisical patients, and already, according to Dr. Woodhead, there has been a diminution in the deaths from phthisis in the Grand Duchy of Baden from 3·08 in 1,000 in 1882 to 2·80 in 1,000 in 1887, a percentage of decline which Dr. Woodhead estimates would, in the British Isles, amount to a saving of nearly 10,000 lives per annum.

The second great fact is that, though tuberculosis is as communicable a disease as small-pox is, in that it never occurs except as it has been communicated from one sickened by it, yet, wholly unlike small-pox, it is not a contagious disease—that is, it is not communicated by mere proximity to a consumptive. It would be cruel, therefore, to treat consumptives as we must for our safety treat small-pox cases. Instead, experimental medicine tells us just what we are to do to arrest this infection—where we are to find it so as to destroy it after it has left the body of the consumptive—and if the medical science of our day had only done that it would still deserve the gratitude of all mankind.

We now come to the requisites for prosecuting the researches of modern experimental medicine. It will be seen that they imply the formation of a large body of investigators, operating on quite distinct lines of experimental inquiry, and yet each branch of the service indispensable sooner or later to the others.

First in order is the worker in the physiological laboratory. Without his researches into the laws or mechanism of motion, sensation, respiration, circulation, secretion, nutrition, reproduction, and other living functions, many deductions of the other workers might be dubious till his verdict was rendered. For example, a very important question is now raised whether cancer is a parasitic disease like tuberculosis, because some epithelial cells in cancerous tumors are found with suspicious-looking cells inside of them. Are these latter parasitic invading cells, or do epithelial cells sometimes naturally—that is, physiologically—give birth to cells within them, or endogenously, as it is termed? It is obvious that that question must first be answered from the physiological laboratory ere the original question can go further.

Next comes the laboratory of experimental pathology. We may here quote the rather extreme views of Mr. Victor

Horsley, in his address as president of the Section in Pathology of the British Medical Association at its meeting in 1892, of what relation experimental pathology has to pathology itself. He says: "However absurd the statement may appear to some, I venture to assert that pathology as such is almost unknown among us [in Britain]. The fact is that what is commonly spoken of as 'pathology,' taught as 'pathology,' and made the subject of examinations in 'pathology,' is nothing of the sort; it is not pathology; it is morbid anatomy. . . . We have in London a society whose function, as defined in its title, is to promote the study of pathology, but, unfortunately, it has hitherto been only an emporium of morbid anatomy. Thus, even when during the last two years as many as three hundred and twenty papers were communicated to the Pathological Society, not ten, and in 1890 not a single one, dealt primarily with the pathology of any disease. . . . The pathologist should be the student of disordered function as well as of disarranged structure; morbid anatomy is therefore but one side of his work, pathology is the other. As, however, so far as I am informed, there are only three places in England where pathology is taught, the paucity of true pathological research among us can not be regarded as a matter of surprise. It does not seem to be generally appreciated that what is required at the present day is the accurate determination of the observations of normal function, and, seeing what strides normal physiology as a science has made, no difficulty attends the pathologist in this new and fertile field."

Referring to a celebrated discussion on the origin of the dropsy in Bright's disease, which occupied several sittings of the London Pathological Society, and which was participated in by a number of the most distinguished physicians of that capital, he says: "Even in this very year, in a great discussion on the cause of dropsy, and one which appeared to many to be fruitful in little but surmises, opinions that dropsy is due to alterations in the blood pressure alone and chiefly to venous stagnation were freely promulgated and confidently relied upon. Yet they have for more than twenty years been absolutely contradicted by experimental pathologists, and shown to be untenable. I have not the slightest hesitation in saying that this surprising ignorance of pathology is due to want of familiarity with modern progress in physiological and chemical research. Fortunately, laboratories are springing up now on all sides, original investigations are being pushed forward, and the reproach that we have been dead-house students rather than true pathologists will therefore soon be wiped away."

Mr. Horsley speaks rather warmly, being an experimental pathologist himself. His experiments on the artificial production of myxœdema in dogs by the extirpation of the thyreoid gland led directly to the recent remarkable results in the treatment of that hitherto most serious disease in the human subject by the administration of thyreoid extracts, thus opening an entirely new field in therapeutics, the full extent of which can not at present be estimated. But if, from various causes, there have been till lately in England but few laboratories for studying morbid processes in the same way that the physiologist investigates healthy processes, the reverse is the case in other European countries, where such laboratories are attached to nearly every university and leading hospital.

Next in order comes the bacteriological laboratory. This generation will ever be known in medicine as the bacteriological era. The wonderful results in the saving of life by arresting the terrible scourge of puerperal fever, by enabling surgery to reduce the mortality from accidents or operations to a degree undreamed of twenty-five years ago, and the power which our profession now has to stop the march of the great Asiatic epidemic more effectively than any army has ever defended its country from an invader, have already familiarized the general public with the fact that a greater discovery has been made in this generation than the discovery of the uses of steam or of electricity. That discovery is the relation of the unseen earthly world of life to the seen. In actual bulk the living kingdom invisible to the naked eye is greater than the visible, because it is relatively omnipresent, while the visible is relatively local. But just as the visible vegetable and animal kingdoms are vitally interdependent, so this great discovery reveals the fact that, but for the invisible kingdom, the visible could not long continue to exist, for Nature soon would be choked with her own dead. It is to the activity of the world of micro-organisms that whatever has ceased to live is dissolved away into its original elements. The general relation of micro-organisms, therefore, to the other departments of life is beneficial and necessary. But it happens that there are some members of this vast host which can work mischief in animal bodies before death, each in its own way, and thus become directly causes of specific diseases. But how separately to identify any particular form among so many millions, and fasten upon it the indictment of a disease producer, is a much more difficult task than to single out one ruffian from the midst of a surging crowd of Gravesend voters and then prove the case against him. How deftly this has to be done in the case of bacteria, where so many look much alike, without having other bacteria confuse the verdict by crowding in along with the suspect, is illustrated by [any] one of the procedures recommended for getting a pure—that is, an unmixed—culture of the tubercle bacillus. As it is difficult to obtain pure cultures from tuberculous sputum, on account of the presence, just mentioned, of other bacteria, which grow much more rapidly and take full possession of the culture plate before the tubercle bacilli have had time to form their colonies, it is best first to inoculate a guinea-pig with the sputum from a consumptive, and to obtain cultures from it after the infection has become fully developed in it, which usually takes about three weeks. The guinea-pig should then be killed in a room wholly free from dust and its body laid on its back on a sterilized board, after its skin has been thoroughly washed in a 1-to-1,000 solution of corrosive sublimate. Then, having sterilized beforehand a number of knives, scissors, and forceps by passing them through a flame and quickly putting them under a glass bell jar till they are used, the operator, having already thoroughly sterilized his own hands, cuts the skin over the thorax and turns it back only just enough for his purpose. Fresh instruments are then taken to avoid pollution by stray germs, an opening is made into the chest cavity, the root of the lung drawn out, and a well-defined tubercle nodule is taken out with a slender, sterilized forceps and the nodule transferred to a sterilized glass dish. Time obliges me to leave the next details how to inoculate the culture medium, except to say that finally, to keep the said medium from becoming too dry for the development of the bacillus, it is best to keep the cultures in a moist atmosphere, and to prevent evaporation by a rubber cap over the end of the test tube, which cap should be sterilized in a 1-to-1,000 solution of sublimate for destroying the spores of mold fungi, which in a dry atmosphere would be harmless, but under the rubber cap are likely to sprout and send their mycelium through the cotton plug to the interior of the tube, thus destroying the culture.

We have quoted all this merely to give some idea to those unfamiliar with the subject that the modern germ theory of disease is not built on theorizing, but, instead, on extremely careful work. Then it is but the beginning of this work to observe the forms or appearances of the microbes, though, to do *that* properly under the microscope, bacteria have to be stained with certain dyes, then washed in water or alcohol; then these dyes are in turn partially decolorized by chemical agents and then dyed again, each among a multitude of species often demanding a complicated formula of its own for the process. But, as we have said, after all this, further researches are needed to prove that this particular one is the sought-for kind, because other and very different bacteria may show the same appearance which it does. Thus, after Koch identified the comma bacillus of Asiatic cholera, it was soon alleged that a similar comma bacillus could be obtained from the dejecta of persons sick with ordinary cholera morbus; and then another comma bacillus, still more resembling Koch's, was reported as growing in old cheese. Pickpockets in a crowd may be suspected on account of their looks, but only their behavior justifies their arrest, and likewise it is necessary to observe the behavior of bacteria much more than their looks. This can be done only by finding suitable media outside the body in which they will grow. Growing microbes, however, is a very special business. In an ordinary garden it needs much industry to keep weeds out of particular beds, but how to keep microbe weeds out of a prepared culture medium often taxes the patience and skill of the bacteriologist beyond description. For a long time the whole investigation was retarded by difficulties of this kind when they were first cultivated in nutrient liquids, and it is one of the great services of Koch that he devised the method of cultivating on solid nutrient surfaces, such as gelatin, agar jelly, etc.

With a final success in obtaining a pure, or unmixed, culture, the task begins of observing how they develop, what makes them grow freely, and what checks them, for only thus can be learned the most certain methods of destroying them—that is, of securing disinfection. But this entails more painstaking watchfulness than is demanded of any other cultivator, for often more is learned from the chemical effects of the growth upon its medium or soil than from any other results of the whole process. Hence it is easy to see that this branch of experimental medicine demands a precision in work which implies in the investigator not only a thorough training in microscopy and in chemistry, but also the possession of appliances and contrivances which make a modern bacteriological laboratory one of the most striking monuments of science which the world has ever seen.

Lastly, chemistry is indispensable to experimental medicine. This majestic science, whose field is conterminous with the material universe, in none of its branches is more important or more recondite than in the chemistry of life. It is now clearly recognized that without chemistry, bacteriology would help us but imperfectly in the problems of infection. The earlier view, that bacteria work their mischiefs by themselves invading the blood or the tissues, and that they are to be discovered there, is now much modified by the knowledge that the action of many of the disease producers is by their forming virulent chemical poisons which are absorbed into the circulation from local seats of bacterial growth. The microbes which do the deadly work of diphtheria do it all where they form the diphtheritic membrane, for as they grow there they generate three different chemical poisons which are absorbed into the blood and which have been isolated in chemical laboratories where such investigations are carried on, and which poisons injected into animals produce just the fatal paralyses, the fatty degeneration of the heart, and the general systemic changes which are found in human victims of this disease. The bacillus of typhoid fever and the micro-organism of Asiatic cholera both live in the intestine and there generate the poisons, which, absorbed into the blood, give rise to the symptoms of these diseases. These and similar discoveries show that it is chiefly by their chemical products that bacteria produce their effects, and hence it is to chemistry that much of the whole problem of infectious disease will have to be referred.

But there is another great question now under investigation of extreme importance—namely, What is the reason that so many infectious diseases leave the patient immune against another attack? Two different answers are given—one from the laboratory of the chemist and one from the laboratory of the experimental pathologist. The chemist says that bacteria as they grow in a medium finally generate poisons which wholly neutralize their action, and that these secondary poisons can be isolated from the blood of animals which have become immune against the original poison of the bacterium, and that this antitoxine, as it is termed, can be used to arrest a case of the disease by its counteracting the disease poison itself. In the treatment of that terrible affection, tetanus or lockjaw, this has been finally demonstrated within the past year to be the case, and it is proposed to extend this principle to the treatment of pneumonia and of many other infections. On the other hand, many experimental pathologists maintain that invading bacteria are met by hosts of the white corpuscles of the blood, which crowd to the seat of the infection and forthwith attack the invaders by literally eating them up. It is then only when the invaders are too strong in numbers, or the white corpuscles have been weakened by some cause, that the battle is lost for the body. Probably both of these views—that is, the antitoxine and the phagocyte, as it is called—are right; but it is evident that these vitally important questions are questions which only experimental medicine could either raise or settle.

(*To be concluded.*)

Original Communications.

NOTES UPON SOME
KYMOGRAPHIC TRACINGS OF TREMOR.

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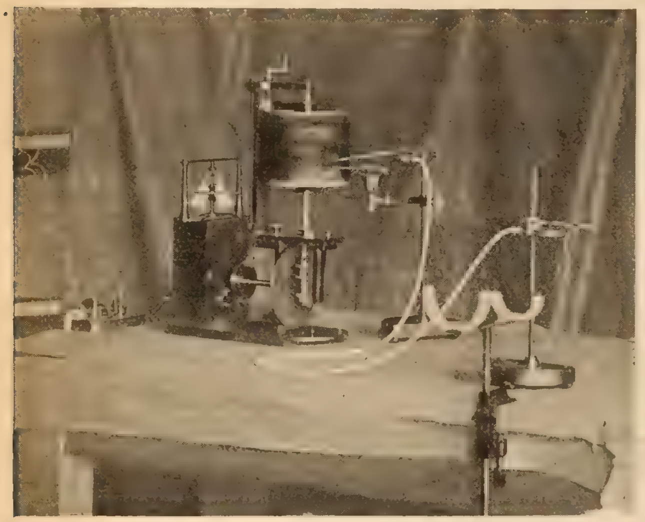

FIG. 1.—Apparatus used for taking tremor tracings Ludwig's kymograph with electric connection for seconds. Two Marey's tambours joined together by a rubber tube. Arm-rest screwed to table.

IN a paper entitled A Contribution to the Study of Muscular Tremor, read before the American Neurological Association in 1888,* I gave the details of observations upon the tremors of paralysis agitans, Graves's disease, multiple sclerosis, hysteria, neurasthenia, and alcoholism, the tracings of which were taken with the Edwards' sphygmograph. The rate of these tremors, as determined in this way, I made out as follows:

	To the second.
Paralysis agitans	3·7 to 5·6
Morbus Basedowii	8·7 to 12
Multiple sclerosis	5·4
Hysterical tremor	7·7
Neurasthenic tremor	7·4
Delirium tremens	5.6
Chronic alcoholism	8·5 to 11·2
Ankle clonus in primary lateral sclerosis	6

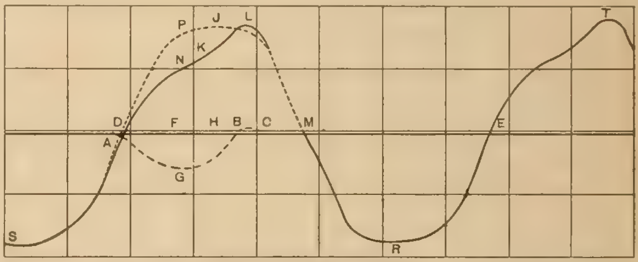

FIG. 3.—Geometrical analysis of paralysis agitans wavelet taken from upper right hand corner of Fig. 2.

While the sphygmograph does in reality serve sufficiently well for ordinary clinical purposes in the registration of these tremors, it is not satisfactory from a scientific point of view, because it is not exact in the determination of the rate. Take, for instance, the following table from my chapter on Paralysis Agitans in Starr's *Familiar Forms of Nervous Disease*:

Author.	PUBLICATION.	Rate to the second.
Marie	*Contrib. à l'étude*, etc.	5
Charcot	*Mal. du système nerv*	4–5
Ewald	*Berl. klin. Woch.*, 1883, No. 32	5
Grashey	*Arch. für Psych.*, 1885	4·14–5·34
Huber	Virchow's *Arch.*, vol. cviii, p. 45	3·43–5·57
Gowers	*Dis. of the Nerv. Syst.*, 1888, p. 1001 ...	4·8–7
Wolfenden and Williams	*Brit. Med. Jour.*, May 19, 1888	5·1
Peterson	*Jour. of Nerv. and Ment. Dis.*, Feb., 1889.	3·7–5·6

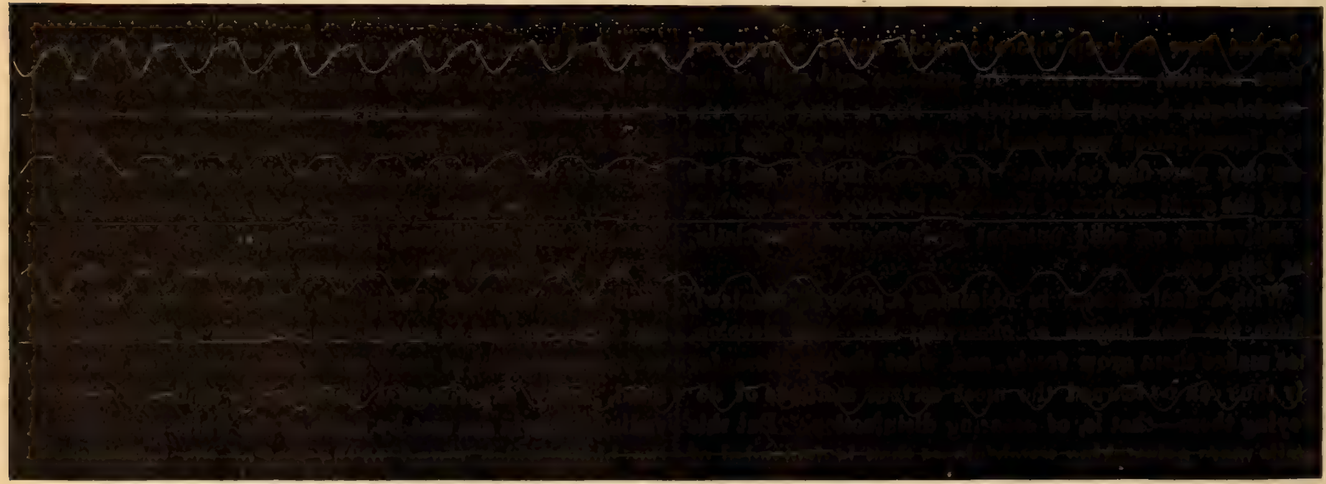

FIG. 2.—Tremor of paralysis agitans, showing dicrotism. Rapid revolution of drum of kymograph.

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* *Jour. of Nerv. and Ment. Disease*, February, 1889.

Most of these authors used the antiquated Marey sphygmograph, which is much more inexact than that of Edwards, employed by myself. From this table, giving the rate of tremor in paralysis agitans as noted by divers authors, it will be seen that there is great variation in the figures. Wolfenden and Williams made use of a kymograph, and approached very near to what I conceive to be the actual rate of this tremor to the second.

Quite lately Dana (*Medical News*, Dec. 17, 1892) has employed the Dudgeon sphygmograph for the same purpose, making the rate of tremor in paralysis agitans from 3 to 6·1 per second. This great variation I believe to be due rather to the instruments made use of than to differences in the rate of the tremor itself.

In Fig. 1 is shown the Ludwig kymograph, with its electric connection for seconds, and the two Marey tambours joined by a rubber tube, and also the rest for the arm while the tremor is being taken. The advantages of this apparatus are the greater accuracy of the time rates and the ability to modify the revolution of the drum so as to magnify the tremor waves. Rapid revolution of the drum magnifies the waves so that each wave may be carefully studied in all its details, and dicrotism becomes markedly visible. The apparatus was set up in the physiological laboratory of

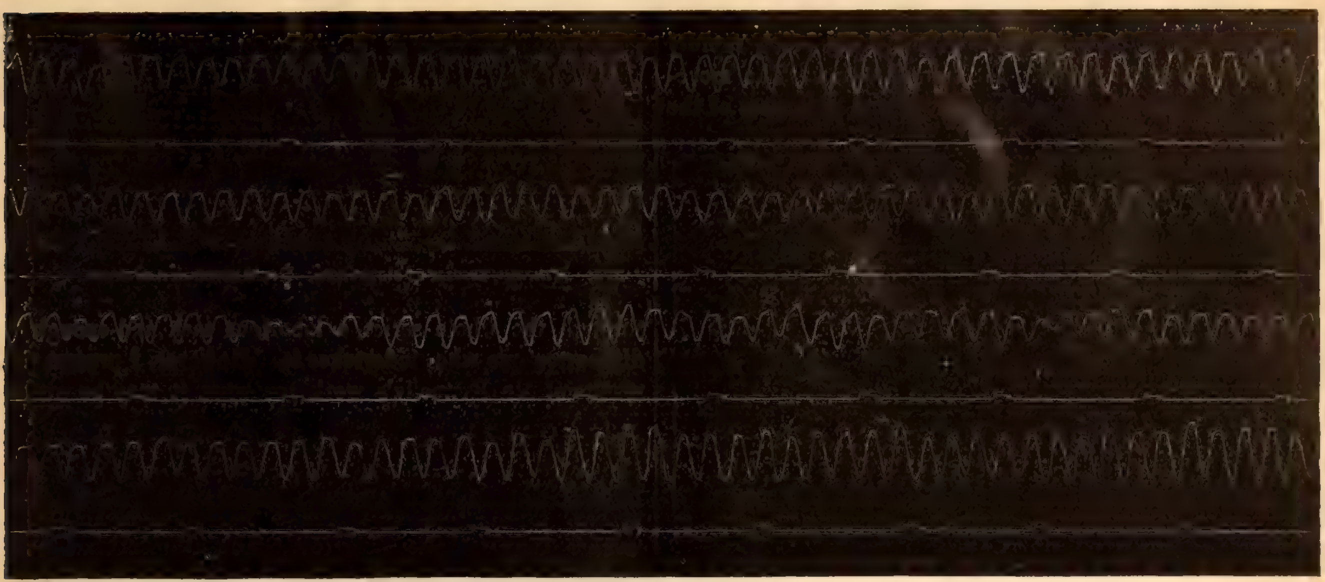

FIG. 4.—Tremor of paralysis agitans. Slower revolution of drum.

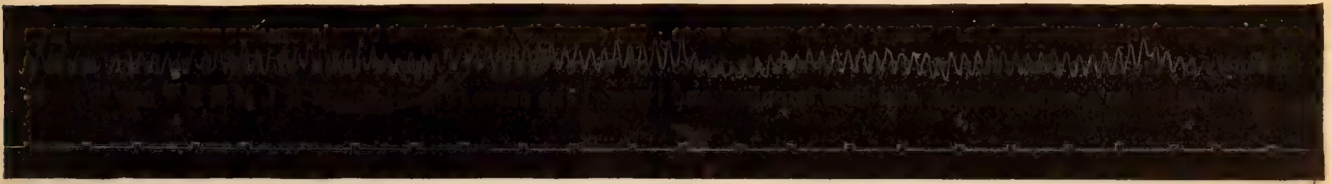

FIG. 5.—Tremor of paralysis agitans. Still slower revolution of drum.

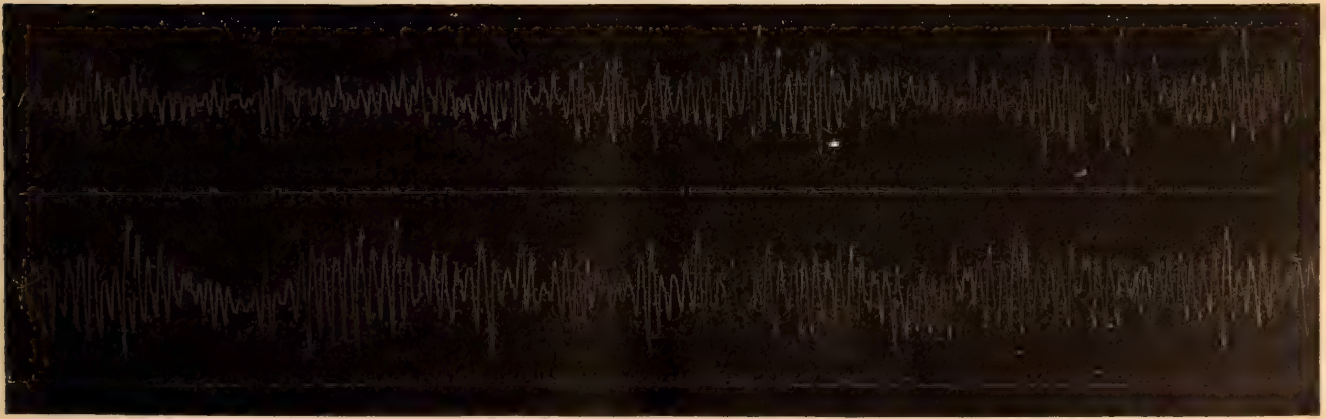

FIG. 6.—Tremor of paralysis agitans. Slow revolution of drum. Singular grouping of series of waves, each four seconds.

the College of Physicians and Surgeons, and patients were taken from the Vanderbilt Clinic for purposes of study. I am indebted to Professor John G. Curtis for placing it at my disposal.

In Fig. 2, on page 294, we have four tracings taken from a case of paralysis agitans, the drum being rapidly revolved so as to magnify the tremor waves. The movements represented are of the flexors and extensors of the wrist. The tendency to dicrotism is very pronounced, and the rate per second is seen to be exactly 5. Just beneath each tremor wave is the line indicating the seconds. Mr. A. E. Kennelly, of the Edison Laboratory, kindly volunteered to make a geometrical analysis of some of these waves, with a view to possibly determining some interesting features of diagnostic value. Thus, if the waves were constantly of the same character, we could always attribute a certain outline to a certain cause, and thus impulses and activities not visible in the aspect of the waves as a whole might be discovered. With a series of waves, such as liquid waves through elastic tubes (the pulse), this careful geometrical analysis would undoubtedly prove of great value, for here the current velocity, the elasticity, and the resulting wave train are almost invariable. But where, as in the tremor waves above given, variation is considerable, such analysis is exceedingly difficult and must be carried through the whole series, a laborious task and enough to dishearten one who undertakes it. However, I present the results of Mr. Kennelly's work for what it may be worth. He carefully transferred by micrometer measurements a pair of waves from the upper train of Fig. 2 to large scale paper. The curve (Fig. 3) S D N K L M R E T can in its first half wave length be analyzed into components, one of which is the second semi-wave, M R E, inverted, and the other a smaller opposite wave in dotted line, A G B. The opposite wave has two thirds of the main wave length and one third

FIG. 7.—Tremor of paralysis agitans. Rapid revolution of drum.

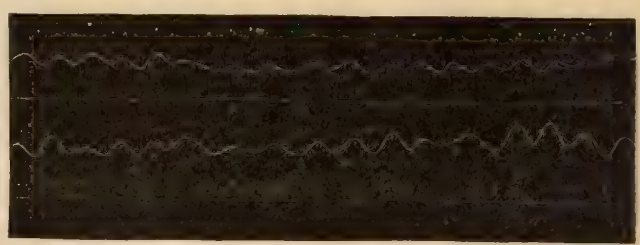

FIG. 8.—Tremor of alcoholism. Rapid revolution of drum.

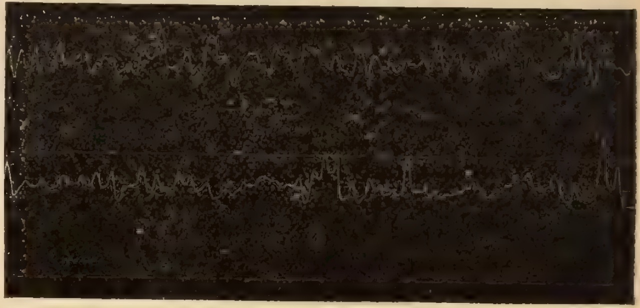

FIG. 9.—Tremor of hemiplegic polymyoclonus from whole of paralyzed hand

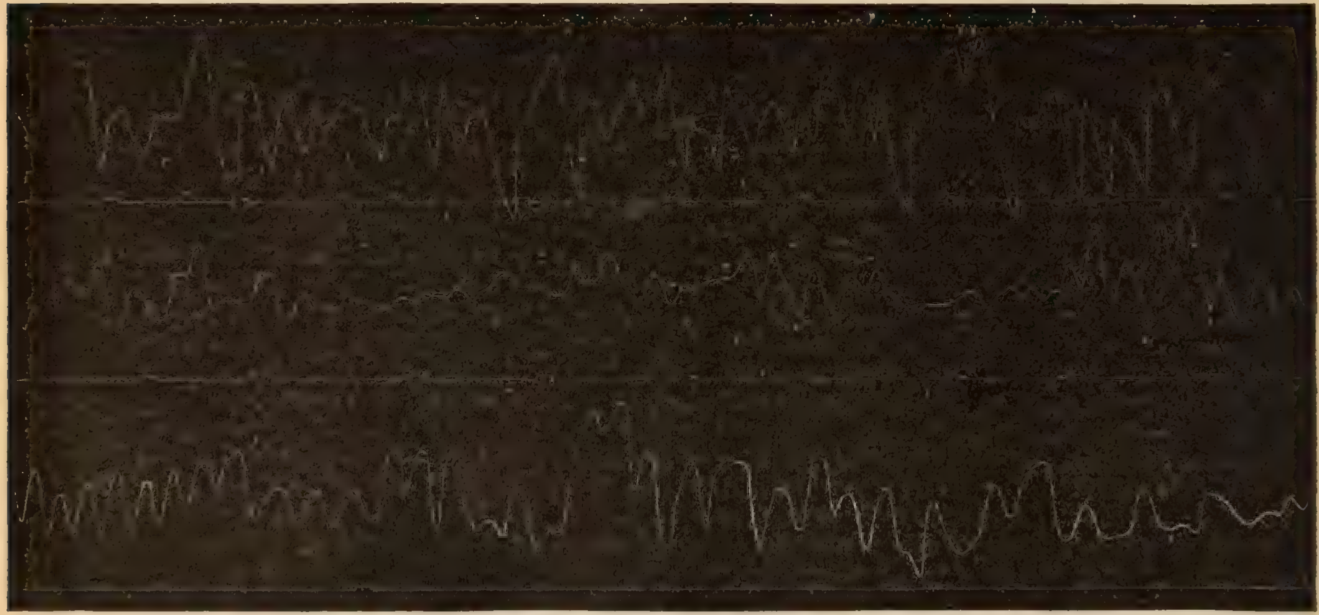

FIG. 10.—Tremor of methemiplegic polymyoclonus. Taken from the thumb only.

of the main wave amplitude, so that (neglecting as a possible discrepancy the wavelet B C unaccounted for) there is a main train of waves, with a semi-train superimposed upon it, making a compound wave-train. Thus, as far as the tremor of paralysis agitans is concerned, this analysis merely serves to make the dicrotism more manifest. I trust that some one will apply the method to the more perfect waves of sphygmograms.

In the preceding tracings (Fig. 4), in another case, also taken from the wrist, the drum was revolved more slowly. The tremor rate of five per second is still very exact, and even the tendency to dicrotism is marked, though not magnified so greatly as in Fig. 2.

Fig. 5 represents in another case of Parkinson's disease the tremor of the thumb with a still more slowly revolving drum. The rate per second remains the same, but such a tracing is no improvement upon one obtained from a sphygmograph. The evenness of the tremor of paralysis agitans is the only characteristic feature.

Fig. 6 is a tracing also from the thumb, in another case where the tremor was very marked and the excursions wide. The revolutions of the drum were at the same slow rate as in the last. A remarkable feature of this tracing is a manifest tendency to a grouping of the waves about every four seconds, as if the innervation impulses were invigorated every few seconds. I could not determine whether this was due to some respiratory influence or to some unknown factor (such as nutritional rhythm in the cortical cells ?). This is certainly worthy of further study. In another group of tracings, unfortunately lost, this peculiarity was much more pronounced.

Fig. 7 is a series of ring-finger tracings of the tremor of paralysis agitans with a rapidly revolving drum. While the rate of five per second is very apparent here, the greatness of the excursion prevents the development of the dicrotism, which was so marked in the cases where the wrist muscles were investigated.

In Fig. 8 we have the fine tremor of alcoholism greatly magnified by swift revolution of the drum. From a careful study of this tremor in a long series of many tracings I find the rate to be ten to the second. The above tracings show merely one or two seconds out of five or six on the same piece of paper. The uniformity of the tremor is also marked. Some tremors of Graves's disease and of general paresis were so similar in character and rate (ten to the second) that they are not reproduced.

Some time ago I called attention to a variety of post-hemiplegic movements (*Trans. N. Y. Neurolog. Soc.*, Dec. 6, 1892) following infantile spastic hemiplegia, to which I gave the name methemiplegic polymyoclonus. It is a rare phenomena, for out of over two hundred and fifty cases of infantile cerebral palsies that have come under my observation I have seen but two with this form of morbid movement. It consists of rapid and not synchronous clonic spasms in the muscles of the limbs affected. The excursions of the separate muscles are about equal to those of paralysis agitans and the rate is five to the second. Indeed, if the muscles moved synchronously, the condition would be exactly analogous to paralysis agitans. The tremor is constant, and only ceases during sleep. It would be improper to call it either athetoid or choreiform, and hence my selection of a new designation. The character of this movement is indicated by Fig. 9. Here the whole hand clasped a bulb connected with the tube leading to Marey's tambour and the delineator. The inco-ordinated and rapid movement is shown in the irregularity of the wave train. The drum revolved slowly in fifty-three seconds, and only about a third of the completed tracings is shown. The movement in the thumb alone is shown in the three tracings of Fig. 10.

In closing I will merely say that compared with the kymograph the sphygmograph is of course crude and uncertain in the registration of these various tremors. Most tremors can, I think, be placed in two categories—one a fine and rapid tremor at the rate of ten to the second, corresponding to the normal innervation rhythm as determined by Horsley and Schafer, and one a slow tremor wherein the normal innervation wavelets are fused into groups of two, giving an apparent rate of five to the second.

THE PRESENT STATUS OF INTUBATION IN THE TREATMENT OF CROUP.

By J. O'DWYER, M. D.

Most difficult would be the task of the impartial reader who would attempt to arrive at any definite conclusion regarding the value of intubation from the most careful study of the literature of this subject, unaided by personal experience. So conflicting are the opinions that have been expressed by the numerous writers on this subject, that the partisan, choosing whichever side his fancy or prejudice might dictate, could produce an array of authorities and statistics in support of his arguments, either *pro* or *con*, that to the inexperienced would appear overwhelming. Jumping at conclusions from a limited experience, the one thing above all others that the practice of medicine should teach us to avoid is the principal cause that has led to the confusion and difference of opinion that still exist on this question. The more fatal a disease, the more caution is necessary in making deductions from the evidence derived from a few cases, because, under these circumstances, the element of chance or coincidence often plays an important part which is excluded when large numbers are considered. For example, I recently intubated a patient for a physician in my neighborhood, who informed me that it was his eighth case of this kind, and that seven of them had recovered. For another physician, only a few blocks distant, I had intubated a similar number of cases, every one of which died. At the Great Ormond Street Hospital, London, in the year 1890, intubation was first tried in eleven cases of croup with only one recovery. This result was considered sufficiently unfavorable to condemn the operation, and it was therefore abandoned. At the end of two years, owing probably to more favorable reports from other quarters, it was again tried in another series of eleven cases, this time with eight recoveries (*British Medical Journal*, July 22, 1893). Whether only one patient or eight patients out of eleven recover proves absolutely nothing except that some patients do recover after intubation. Neither would it have proved anything had every one of the twenty-two died, except that the mortality following intubation for croup was very large—a fact which no one with sufficient experience disputes. The literature of intubation abounds with similar examples of reaching conclusions from a limited experience, and it is on such evidence that this procedure has been overestimated by some and condemned as useless by others, according to the varying results obtained in a few cases.

The fatal and complex nature of croup, which renders such contradictory results possible under the same method of treatment, is also to some extent responsible for this condition of things.

Acute non-traumatic stenosis of the larynx in children that endangers life by suffocation is, with rare exceptions, diphtheria, either true or false. This disease, if unrelieved by mechanical means, proves fatal in about ninety per cent. of the cases, and, with all the aid that medicine and surgery can afford, it still continues to be, with few exceptions, the most fatal of all the acute diseases. The much-dreaded Asiatic cholera seldom carries off more than half its victims, while croup claims a much larger percentage. Even some epidemics of cerebro-spinal meningitis are more merciful than this disease, the terrors of which are less apparent because always present.

In considering the causes that lead to such frightful mortality and the unsatisfactory results obtained from any method of treatment yet devised, the important fact is often lost sight sight of that the word croup means a good deal more than obstruction in the larynx. Did it only mean the latter, there would be no room for any difference of opinion as to the best method of treating it, because under these circumstances intubation in skillful hands would have no failures.

Those familiar with the pathology of this disease know that the most frequent cause of death, after the laryngeal stenosis has been overcome by means of intubation or tracheotomy, is the extension of the disease to the bronchial tubes, where surgery can not reach it; and that there are several other causes, such as pneumonia, systemic poisoning, paralysis, especially of the heart, and nephritis, each of which contributes its quota toward swelling the mortality of this terrible disease. It goes without saying that the results of any method of treatment in a disease having so many complications, the fatality of which is so great under all circumstances, and which varies so widely in different epidemics, must be obtained from a large number of cases in order to be of any value. Not even are the results of intubation obtained from a large number of cases collected from numerous operators, each contributing a few, of much value, because the ability to intubate without immediate danger to life can not be acquired by the amount of practice derived from a few cases.

It is therefore to large individual experience alone that we must appeal for conclusive evidence as to the value of intubation, not only as a means of saving life, but also as to its more important function as a means of euthanasia in the most excruciating of all forms of human suffering—that of slow strangulation.

There are at present a sufficient number of operators, both in this country and Europe, who possess this kind of experience, and they speak on this subject with no uncertain voice. Among the American intubationists who have had large individual experience and whose opinions on this question are well known I may mention Waxham, formerly of Chicago, now of Denver; Brown, Northrup, Huber, Caillé, Lester, Stanton, and the author, of New York; McNaughton, of Brooklyn; Hailes, of Albany; Eichberg, of Cincinnati; Richardson and Henrotin, of Chicago; Shimwell and Montgomery, of Philadelphia; Cheatham and Pusey, of Louisville; von Glahn, of Cleveland; Pyne, of Yonkers; and Graham, of Toronto. All of these and many others whose names I have not at hand have each had in the immediate neighborhood of or exceeding a hundred cases. Several of the operators mentioned can count their cases by hundreds, and four names could be selected whose aggregate number of cases now exceeds two thousand.

The latest intubation statistics are those by Dr. McNaughton and Dr. Maddern, of Brooklyn, who have collected from 242 operators in various parts of this country and Canada 5,546 cases, with 1,691 recoveries, or 30·5 per cent. (*Brooklyn Medical Journal*, August, 1893). Notwithstanding that it is only within the last three or four years that intubation has been adopted to any considerable extent in Europe, some valuable statistics have already been accumulated. And these statistics are valuable not only because they are the result of large individual experiences, but also from the fact that they have been obtained exclusively from children's hospitals in which tracheotomy had hitherto been the only surgical measure available in the treatment of croup.

Professor Ranke, of Munich, as the result of a collective investigation on the subject of intubation in Germany, reports 1,324 cases of primary laryngeal diphtheria intubated, with 516 recoveries, and 121 cases secondary to measles, scarlet fever, pneumonia, etc., with 27 recoveries—a total of 1,445 cases, with 553 recoveries, or thirty-eight per cent. (*Münchener medicinische Wochenschrift*, No. 44, 1893). Of this number, Ganghofner, of Prague, contributed 498 cases, with 213 recoveries, 42·7 per cent.; Ranke, of Munich, 368 cases, with 128 recoveries, 34·7 per cent.; von Muvalt, of Zurich, 106 cases and 38 recoveries, 35·8 per cent.; Jaburowski, of Cracow, 165 cases and 73 recoveries, 44·2 per cent.; and Unterholzner, of Vienna, 164 cases and 55 recoveries, 35·5 per cent.

Secondary tracheotomy was resorted to in 250 of the cases, with only 20 recoveries, or about seven per cent.

In regard to the value of these statistics Ranke speaks as follows: "This number proves for itself that O'Dwyer's intubation, which at first and until lately was severely fought on all sides, has in the course of a few years gained more and more friends on this side of the Atlantic, and it proves that the dangers which were formerly charged against intubation must have been very greatly exaggerated."

And again, in giving the true explanation of the insignificant results obtained by means of secondary tracheotomy after intubation had failed, as follows: "The extraordinarily small percentage of recoveries from these secondary tracheotomies is explained in this way: that in the majority of these cases secondary tracheotomy is resorted to after the diphtheritic process has extended to the bronchi, and that, under these circumstances, tracheotomy could not accomplish any more than intubation."

Similar testimony as to the value of this procedure comes from Hungary. Bokai, medical director of the Stefanie Children's Hospital of Budapest, has already intubated over 500 cases of croup, with recoveries of thirty-six per cent. In the medical report of the hospital for the year 1892, with an experience at that time of nearly 300 cases, Bokai, after referring to the necessity of having an additional diphtheria pavilion constructed, proceeds as follows: "That this construction was required was demonstrated by the fact that all the beds and extra rooms were continuously filled. The cause of this great attraction of our diphtheria division was due chiefly to the employment of intubation, and it gives us pleasure to be able to state that this procedure has given splendid results, so that tracheotomy has become almost wholly superfluous. In consequence of these splendid results, numerous friends have been added to the side of intubation, both in the country as well as in the city, and many colleagues have availed themselves of the rich material at our disposal to practice intubation under our direction. Convinced of the extraordinary importance of O'Dwyer's intubation in hospital as well as in private practice, I deemed it my duty to so instruct my colleagues, and it gives us pleasure to say that this acquisition has spread from our hospital throughout all Hungary."

Such is the evidence regarding the present status of intubation in Europe furnished by men whose reputations are more than national, and whose experience with this procedure has been amply sufficient to entitle them to speak on this subject with the voice of authority.

It will be noticed that the percentage of recoveries is considerably larger in Europe than is generally obtained in this country, and the same is also true of tracheotomy. The ready accessibility at all times of a skilled intubationist should give some better results in hospital than in private practice, which may in part explain the difference, as the statistics from the other side come exclusively from the hospitals, while in this country they are furnished, with few exceptions, from private practice. In 186 patients treated at the Willard Parker Hospital in New York, thirty-eight per cent. recovered, while at the Boston City Hospital 392 cases gave only twenty per cent.

In the former the resident physician and one trained assistant performed all the intubations, while in the latter they were done by successive house staffs, each member of which had charge of the diphtheria division in rotation. Under the latter circumstances the individual experience was necessarily small, so that no single operator could have had a sufficient amount of practice to enable him to avoid the accidents, not infrequently fatal, that are inseparable from intubation in the hands of the novice. That the different conditions which existed in these two hospitals explain the great discrepancy in the results I do not believe; but that they were sufficient to produce a very considerable difference in the percentage of recoveries there is not the slightest room for doubt.

In regard to the comparative merits of intubation and tracheotomy as life-saving measures in the treatment of croup, I do not know of any stronger argument that could be produced in favor of the new procedure than a short quotation from a paper by Dr. L. S. Pilcher, of Brooklyn, during a discussion on this subject before the Kings County Medical Society (*Brooklyn Medical Journal*, August, 1893).

Dr. Pilcher, while advocating the claims of tracheotomy as the greater life-saving operation, makes the following very candid statement: "I believe that it has been my lot to be called upon to do tracheotomy for the relief of croup in a considerable proportion of the cases that have sought surgical relief, and yet during the seventeen years during which I have been operating I have been called upon to do the operation but 66 times, notwithstanding the deaths from croup in our city during this period amounted to between 400 and 500 every year. On the other hand, during the past four years Dr. McNaughton has been called upon to intubate 142 times. He has been instrumental in saving 42 lives in four years, I but 22 in seventeen years, notwithstanding 33·33 per cent. of my cases recovered and but 29·5 of his." In other words, Dr. Pilcher was doing tracheotomy on an average of four times in a year, when the deaths from croup during the same period amounted to between 400 and 500.

Estimating from the deaths as given above, the total number of croup cases that occurred in Brooklyn during the seventeen years referred to was somewhere between 8,000 and 9,000, and out of this vast number the most celebrated tracheotomist of that city succeeded in saving the lives of only 22. This is a good example of the life-saving qualities of tracheotomy, an operation which the poorer classes, among whom croup principally prevails, seldom consent to, and if they did the skilled nursing so essential to the proper after-treatment would not be available. Intubation, on the contrary, is rarely objected to by either the rich or the poor, the ignorant or the intelligent, and no skilled nursing is required, the one and only requisite being trained operators. Outside of hospital practice there is, therefore, no room for comparison between these two procedures, the question as to whether, in a given number of cases, one operation may save a small percentage more or less than the other being one of scientific rather than of practical interest.

The difficulties and dangers of placing a tube in the larynx or removing it in the short space of time that is compatible with safety are either great or small according to the practical experience of the operator. When this important fact shall have been more generally recognized intubation will not be attempted by so many as heretofore, but will be left to those who have had some sort of preliminary training, if not on the cadaver, at least on a larynx, or on one of the smaller animals. By any of these means sufficient dexterity with the use of the instruments may be acquired to avoid at least some of the accidents inseparable from this operation in the hands of beginners.

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ACUTE LACUNAR DIPHTHERIA OF THE TONSILS,

WITH STUDIES ON THE RELATION OF THE REAL TO THE PSEUDO *BACILLUS DIPHTHERIÆ.*

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THE class of cases forming the subject of this paper are those in which diphtheria either begins or runs its entire course with the local picture of a lacunar or follicular amygdalitis. These cases, whose clinical study has been the subject of much difference of opinion, are becoming more important daily. It is through the avenue of these cases that diphtheria, sometimes of a fatal character, is unsuspectingly spread broadcast. If we are to advance in the prophylaxis of diphtheria we must do this not through means of the pronounced cases, in which the membrane is apparent even to the lay observer, but through the cases which in every way simulate the ordinary "sore throat," or tonsillitis, or lacunar or follicular amygdalitis. In my first paper upon diphtheria published in this journal I made a study of the *doubtful cases* of diphtheria. In those cases the diphtheria began or persisted as a simple angina or was manifest in the form of minute doubtful specks of exudate, "punctate membrane" upon the tonsils or soft palate, or was found to begin or run its course as an amygdalitis, or, beginning as a lacunar amygdalitis, would terminate in a descending diphtheria with stenotic symptoms. For the sake of unity the writer has confined himself in the present paper to the study only of those cases of diphtheria which begin or run their entire course with the *clinical picture* of a typical lacunar amygdalitis.

Anatomically the assumption of a form of diphtheria which may present a lacunar distribution can be more easily understood if we study what transpires in the normal tonsil as well as in the inflamed structure. Stöhr proved conclusively that in the tonsils there is normally a constant diapedesis of leucocytes from the central follicles of the organ through the several layers of flat epithelium on the surface of the tonsil. These leucocytes reach the surface of the tonsil and are found in small masses between the epithelial cells of the external layer of the tonsil. They are thrown thus into the cavity of the mouth and are found also in the lumen of the lacunæ.

Heubner, studying the abnormal conditions that are found in diphtheria, states that this normal lymph current, if we may so call it, is replaced by an abnormal exudate of lymph and fibrin from the vessels in the interior of the tonsil. This fluid is exuded through the several layers of surface epithelium, and when it reaches the surface of the tonsil it coagulates. Its youngest form is in the shape of a coagulated network of fibrinous exudate, containing in its meshes the flattened horny epithelium of the uppermost layer on the tonsil. Thus for the first few days in the history of diphtheria we may have this coagulated exudate manifest itself in streaks or spots on the surface of the tonsil, indicating the situation of the lacunæ, follicles, or crypts, and the irregularities of surface between these structures. It is foreign to the purpose of this study to enter the pathological field dealing with the structure of the forms of diphtheritic exudate or membrane.

Modes of Investigation.—The cases studied in this paper have been investigated both from a clinical and bacteriological standpoint. As to the latter mode of study, the methods pursued in all cases were exactly those utilized in the first paper of the writer which appeared in this journal August 27, 1892. Special stress is laid upon the animal experiment as the only positive proof of the virulence of the Loeffler *Bacillus diphtheriæ.* From the ordinary crude clinical, diagnostic, or hygienic standpoint it can be said that an adept can easily identify the Loeffler bacillus by its form, lack of motion, growth on media, and bouillon reaction (Roux, Yersin, Escherich), without going through the tedious animal tests. Yet this method, moderately certain for rapid diagnosis, is scarcely available for permanent and reliable scientific work.

The cases in this paper have thus been subjected to the above-mentioned test and the number is limited. After proving certain theses the further accumulation of material has no additional scientific value.

Clinical Course.—The cases collected in this study divide themselves quite distinctly into three leading groups.

The first group of cases are those whose course is an exceedingly mild one—so much so that the patients show little or no constitutional disturbance. The appetite is good; the children are up and about; they complain of slight uneasiness in the throat; sometimes these throat symptoms are absent. Examination of the fauces shows a general hyperæmia; the tonsils are enlarged. When the patient gags, the tonsils become still more prominent and reveal the enlarged open lacunæ. There is absolutely no membrane to be seen on the surface of the tonsil, but there is a yellow spot here and there which, on investigation, will be shown to be the opening of a lacuna or follicle or crypt. The lymph nodes at the angle of the jaw may or may not be enlarged. The above-described local symptoms are so mild that they may have improved or even disappeared the following day. The patient then is to all intents recovered from this so-called attack. We will show the fallaciousness of this assumption in our cases.

CASE I.—Boy, aged six years, has been ill only for twenty-four hours; complains of soreness in his throat. Inspection shows the lacunæ filled with a fibrinous material on the right side, which can be scooped out of the tonsillar lacuna without difficulty. There is on the surface at the anterior border of the tonsil a minute fibrinous streak. Lymph nodes at the angle of the jaw on the right side enlarged. Temperature 101·8° in the axilla; the boy's condition is excellent and he does not feel ill.

Bacteriological examination of the fibrinous plug removed from the lacuna of the right tonsil and spread upon blood serum and subsequently isolated shows Loeffler bacilli virulent to guinea-pigs in dosage of 0·5 c. c. of bouillon culture within forty-eight hours. On the following day the tonsils still large, but the fibrinous streaks of exudate had disappeared.

A week subsequent to the above, the boy had completely recovered and the tonsils had returned almost to the normal size and appearances; they were still a little large and slightly red. A minute scoop was entered into the lacuna of the right tonsil as near as possible in the same situation as the first plug. This tonsil had this lacuna near the anterior border.

Diphtheria bacilli found virulent in same dosage as above.

Two weeks after the onset of the disease a similar plug removed from the same tonsil in the same locality.

Diphtheria bacilli still virulent in dose of 0·5 c. c. of bouillon culture forty-eight hours old.

At this time the appearance of the fauces was absolutely normal: no lacunar plugs to be seen. The above fibrin plug was extracted from the depths of the lacuna of the right tonsil. The case is continued in Part II of this paper.

Case II.—Sister of the preceding, aged eleven years, had absolutely no subjective symptoms, yet tonsils were enlarged and swollen, lacunæ open and wide, no elevation of temperature; child denies even soreness of the throat or any feeling of illness. Examination of the contents of the lacunæ scooped out as above shows what to all appearance were the Loeffler bacilli. They were not tested on animals.

A week subsequent to the first visit these bacilli had disappeared.

Case III.—Minnie B., aged eleven years. A baby sister of patient had been ill two months previous with what, from the history, might have been diphtheria. The mother, who from this time inspected the throats of the children daily, found on the day of the visit to the writer slight redness in the throat.

Status.—Tonsils are swollen and red; there is no membrane; the lacunæ contain a soft yellow substance which can be removed in form of a plug (fibrinous). The whole picture one of lacunar amygdalitis. Temperature is slight, so that it was not taken. No glandular enlargements. Child in the best of spirits and condition. Examination of the plug, removed with sterilized scoop from the lacuna, showed diphtheria or Loeffler bacilli virulent in bouillon culture forty-eight hours old in dose of 0·5 c. c. to guinea-pigs.

Two weeks subsequently the angry appearance of the tonsils had disappeared. The one lacuna from which a yellow plug had been removed no longer showed reaccumulation of exudate. Child protests she is not ill and wants to return to school, which, of course, was not permitted.

Two weeks after the first examination a plug was removed from the lacuna in the same tonsil in about the same situation as the first plug. The bacilli in this plug were no longer virulent. They will be discussed under the heading of the pseudo bacillus.

In the above-cited cases we have a very mild form of tonsillar lacunar diphtheria—mild from the outset, watched all along its course, absolutely no membrane anywhere, and the children at no time during their illness in bed. The sterilized scoop, entered into the same tonsils at the same situation, showed that, as in the first case, there were bacilli in the depths of the lacunæ fully up to three weeks after the boy had shown no signs of lacunar plugs pouting from his tonsils. His case will be continued under the pseudo heading, and it will be shown that, as in Case III, the virulent was finally replaced by a non-virulent bacillus. Roux and Yersin, in investigations upon membranous diphtheria of the tonsils, recorded cases in which bacilli of Loeffler had persisted for fully five weeks after the disappearance of membrane. The foregoing, I believe, are unique as showing the persistence of virulent bacilli in the depths of the tonsillar lacunæ for weeks after complete convalescence. The non-virulent bacilli found in Cases I and III will be discussed in the second part of this paper.

The second group of cases of lacunar diphtheria are those in which the symptoms, both local and constitutional, are somewhat more severe than in the first group of cases. The patients are quite ill; they suffer as do those patients who are affected with a severe follicular or lacunar amygdalitis of a simple infectious non-specific type (streptococcus). The fever is quite high, the prostration is more marked, and there are other symptoms of constitutional disturbance, such as pains in the limbs, furred tongue, and loss of appetite. Locally the tonsils are seen to be enlarged, red, and there exudes from the lacunæ a soft yellow fibrinous exudate. There is no membrane on the surface of the tonsil. There are glandular or lymph-node enlargements at the angle of the jaw. The following will illustrate:

Case IV.—Annie C., aged four years, has been ill one day. She complains of sore throat; tonsils are quite large and red; they present the typical appearance of a lacunar amygdalitis. When the patient gags, the tonsils protrude pink-red in color and from the lacunæ there is expressed by the act of gagging a soft, yellow, consistent material. Temperature 101°, axillary. Child shows some prostration, but general condition is good Lymph nodes at the angle of the jaw on the left side can just be felt.

Examination of the lacunar contents as exuded shows Loeffler bacilli in almost pure culture, virulent.

Case V.—In this case the amygdalitis was complicated by symptoms of laryngeal involvement. These cases are important, showing as they do that, no matter how typical the lacunar amygdalitis, the larynx may be affected not by a simple but by a diphtheritic process, as are the tonsils themselves. These cases are especially apt to be judged as simple and non-specific.

Case VI.—Male, aged five years, has been coughing for three days. The tonsils are enlarged and have the typical follicular appearance. When the boy gagged it seemed as if the uvula, which curved upward, showed a minute yellow speck at its point. The voice is harsh and the cough croupy. No laryngeal breathing. Prostration marked. Bacteriological examination of the lacunar contents showed Loeffler bacilli.

The third group of cases of lacunar diphtheria are those which from the outset show a malignant course. They do not remain of the pure lacunar type after the first few days. In the following case the change occurred on the third day. The nasal mucous membrane is drawn into the symptomatic picture of the disease. We thus have a case beginning in every way like a severe follicular amygdalitis of a non-specific type (streptococcus), ending in a fatal diphtheria with pronounced septic diphtheritic phenomena.

Case VII.—Baby, female, aged thirteen months. There had been a number of cases of "sore" throat in the family (seven children), especially in that of a boy of eight years, whose throat, I regret to say, I did not examine bacteriologically. There was no membrane in this boy's throat, and there was every appearance when I saw him of a simple non-specific angina. The mother also had suffered from a "sore" throat. The symptoms in all cases had been so mild as not to call for any outside advice. The baby had been ill for two days when first seen. The infant was very pale and quite prostrated; rectal temperature, 102°. The lymph nodes on both sides of the neck, at the angle of the jaw, were much enlarged in packets. There was no skin eruption. The tonsils were enlarged, red, eroded, but had the appearance of a very severe lacunar amygdalitis; no nasal discharge. The following day the tonsils appeared less swollen and the amygdalitis an ordinary one. In view of the constitutional symptoms and a slight nasal discharge, I warned the mother to allow me to see the patient again if improvement was not rapid. Two days subsequent to this the tonsils had again swollen; the discharge from the nose became much more pronounced. The tonsils were so much swollen as not to permit a view of the posterior pharynx. The discharge from between the tonsils now contained minute shreds of what proved to be membrane.

Bacteriological examination of these shreds show Loeffler bacilli and large numbers of Roux's cocci. The case ended fatally, with symptoms of septic diphtheria, including extensive glandular infection.

The Diagnosis.—The constitutional symptoms give us very little clew to our diagnosis in the first group of cases, whereas in the third group the severe constitutional prostration from the outset leads us to suspect something more specific than simple amygdalitis.

The range of *febrile* disturbance is also quite unreliable. *Glandular swelling* may be practically absent in the mild cases, though it will be seen that in some of these cases we had as an accompaniment of the diphtheria a swelling of the lymph nodes on one side only. On the other hand, glandular swelling may be very marked in non-diphtheritic amygdalitis (streptococcus). The swelling of nodes on one side is peculiar to diphtheria, though I have very often seen it in non-diphtheritic cases. *Albuminuria* may be present or absent at first, when diagnosis is most important. It is apt to be present in simple streptococcus disease as well as in the diphtheritic cases.

Henoch says, in a recent article upon the early clinical diagnosis of diphtheritic amygdalitis, that we must judge our cases from the consideration of a completed picture of the disease. It will also be seen that the diagnostic elements presented by this great clinician—the fibrinous exudate from the lacunæ, the confluence of patches of fibrin on the surface of the tonsil, affection of both tonsils, the uvula and nasal mucous membrane, albuminuria, the occurrence of several cases in one family—all apply either to the severe cases (third group), or appear late in the disease. To the writer it still seems that the only reliable test is the bacteriological one. There is now such a reaction as to encourage the hope that soon this test will be applied by the general practitioner in daily practice.

Part II.—Bacteriological.

The methods pursued in the investigation of the cases in this paper included not only an examination of the secretions on the surface of the affected tonsils, but what seemed more interesting and, in fact, imperative was the examination of the contents of the individual lacunæ of the tonsils. The lacunæ could only be studied in the older children, where they are of some size and in which it is possible to introduce a minute sterilized scoop or harpoon. In this way the plug or secretion in the depths of the lacunæ was obtained for study, spread upon serum, and isolated finally upon agar-agar. The writer has been impressed by the fact that the tonsil may harbor for weeks in the depths of its lacunæ, follicles, or crypts, as we may choose to call these structures, virulent diphtheria bacilli. In membranous diphtheria we are not surprised to find, after the membrane has cleared away, that the diphtheria bacilli persist in the numerous ulcerations or erosions left by the membrane on the surface. In lacunar diphtheria, as in Cases I and III, where no membrane is formed in the whole course of the affection, we are surprised to find in the depths of the lacunæ fibrinous plugs which persist for weeks and which contain myriads of virulent bacilli. Roux and Yersin found that in cases of *membranous* diphtheria the *Bacillus diphtheriæ* persisted in a virulent state as long as five weeks after all traces of membrane had disappeared from the fauces. I have had this condition of things repeated in lacunar diphtheria. The *virulence* of the *Bacillus diphtheriæ* can be preserved for an exceedingly long time outside of the body. It resists the drying process if shielded from the direct sunlight. A culture of the *Bacillus diphtheriæ* in the author's possession, after having dried for months in an ordinary test-tube, so that the original agar was reduced to a dry crisp, showed after nine months a virulence in bouillon forty-eight hours old to the amount of half a cubic centimetre to old or young guinea-pigs. The scrapings of such a culture, though containing many involution forms such as have been pictured by the writer in his first article, grew most luxuriantly in agar and bouillon. Old bouillon cultures, reduced by age from evaporation to a few drops from ten cubic centimetres, were found to abound in virulent living bacilli which grew upon agar. Roux and Yersin, in their last article upon diphtheria, assume that the mild cases may yield bacilli which show a diminished virulence in animal experiment. The writer's experience, at least in the class of cases examined, does not tend to confirm this view. Bacilli from the very mildest cases of lacunar diphtheria were found in pure culture virulent to guinea-pigs in dosage of half a cubic centimetre of bouillon culture forty-eight hours old. This dose is now conceded by most writers to be small enough as a test of virulence. All animals injected with such an amount died within forty-eight hours with symptoms of virulent diphtheria (local hæmorrhagic œdema, enlarged lymph nodes, pleuritic and peritoneal effusion).

In Case I the Loeffler bacillus was isolated three weeks after all traces of tonsillar trouble had disappeared. These bacilli were preserved in separate cultures pure, and those isolated latest were found fully as virulent as the bacilli isolated at the outset of the disease. All these bacilli were cultivated from the lacunar plugs so often mentioned in this paper. A dose of half a cubic centimetre of a bouillon culture invariably proved lethal to guinea-pigs of medium weight (three hundred and fifty to four hundred and fifty grammes) within forty-eight hours. In this way the bacilli obtained from the mild cases were compared with a very old culture which has been in the author's possession over two years and which has been isolated by him from a virulent membranous diphtheria. Of this culture a tenth of a cubic centimetre will prove lethal to animals in varying time, but half a cubic centimetre will invariably prove lethal in forty-eight hours if bouillon cultures forty-eight hours old are used. In short, bacilli of a so-called diminished virulence—those which would require two or three cubic centimetres to prove lethal from bouillon cultures forty-eight hours old—were sought by the writer in the mild cases, not of membranous but lacunar diphtheria, and were not found. In the author's experience, the mildest cases furnish as virulent bacilli as the most severe. In all this we assume that certain fixed laws in the preparation of all cultures are followed. The agar cultures are made from single colonies upon alkaline agar one per cent. These agar cultures are taken out of the thermostat after forty-eight hours. Bouillon cultures of simple pepton alkaline bouillon are prepared from these agar tubes. The bouillon is taken out of the thermostat after forty-eight hours. The animals used in testing virulence are always *young animals*, three hundred and fifty to four hundred and fifty grammes in weight. The bouillon cultures should be eight to ten cubic centimetres in bulk and the supernatant fluid above the sediment should not be poured off, as has been done by many authors, and the thick residue used, but the whole culture is shaken up and half a cubic centimetre of this is used. Old animals even of medium weight show a certain amount of resistance to diphtheria and should not be used. The above are brought to the notice of the worker in diphtheria as a result of a long and tedious series of studies in this field. They will insure uniform results.

The Pseudo Bacillus Diphtheriæ (Hofmann, Loeffler).—In the first paper of the writer four cases were recorded in which a bacillus was found which closely resembled the real bacillus, reacted much the same upon culture media, but lacked virulence completely. In the studies of this paper the writer has succeeded in isolating a bacillus from cases in which the virulent diphtheria bacilli had been found and which appeared in the same patient after a lapse of weeks. In ordinary stained preparations (Loeffler blue) an expert would have great difficulty in finding marked differences of form. They were lacking completely in virulence.

The relationship of the real to the pseudo *Bacillus diphtheriæ* has lately been the subject of a critical review by Escherich. This critique was incited by the surprising discoveries of Fraenkel, who described a bacillus which in every way corresponded to the true Loeffler bacillus as to culture and stain, but which differed from it only in lacking virulence. Doses of two cubic centimetres seemed to be well borne by animals, whereas in five-cubic-centimetre doses of a bouillon culture a lethal result followed. Fraenkel isolated his bacillus from the human conjunctiva in cases in no way related to diphtheria. He concluded from his observations that he had before him the true *Bacillus diphtheriæ*, but reduced in virulence; that the bacillus he had isolated and the Hofmann pseudo bacillus were identical. In this way he championed the cause of Roux and Yersin, who maintain the same ground. Escherich does not agree with these observers. The writer of the present paper is inclined to look upon the whole question of relationship of these two bacilli as an open question. But little has been proved on either side. The question is one of the widest range of importance. If the real *Bacillus diphtheriæ* can so completely lose its virulence as will be seen in the bacillus isolated in this study, certainly all known means have as yet failed to bring it back to its original state of virulence. Pasteur, in reducing the bacillus of charbon to a non-virulent organism, did so by artificial means outside the animal economy. I therefore do not consider this fact brought forward by Roux and Yersin in support of their views as quite apt or all-satisfying.

The following studies are certainly unique and are published at this time as peculiarly pertinent to this very important question of the relationship of the real to the pseudo *Bacillus diphtheriæ.*

Cases in which a bacillus, non-virulent, replaced the real *Bacillus diphtheriæ* after a lapse of time:

Case I, *lacunar diphtheria,* virulent *Bacilli diphtheriæ* found up to three weeks after convalescence, then the non-virulent bacilli were found.

If the reader will refer to Case I of the first group of cases of lacunar diphtheria it will be seen that up to the third week after the onset of the illness, and fully that time after the boy felt well and the tonsils had cleared, the tonsils and pharynx were in appearance normal, and were the seat of virulent bacilli.

Three weeks, therefore, after the onset of the illness a sterilized silver scoop was introduced into the lacuna of the right tonsil and a fibrinous yellow plug was removed. This plug was found to contain almost exclusively a bacillus in every possible way as to shape and stain the exact counterpart of the real *Bacillus diphtheriæ.* It was non-motile, stained with Loeffler blue in broken areas, and was not decolorized by Gram. There were clubbed shapes and involution forms in abundance. A very close study of the virulent bacillus taken from the same case and tonsil earlier in the disease (fourteen days after the onset) and this present bacillus side by side showed a very slight difference in thickness of the two bacilli; the non-virulent seemed to stain a little thicker, but so slight was this difference that unmarked there is for practical diagnostic purposes but very little to fix upon, for at times the virulent bacilli are thicker than others, short and long. The length of both bacilli seemed and still appears identical. In growth there are distinct differences.*

Bouillon is uniformly clouded after forty-eight hours and the deposit is much more abundant than that of the virulent bacillus. The reaction of the bouillon is distinctly alkaline after forty-eight hours.

Agar-agar yields a growth in which we at once notice a luxuriance foreign to the virulent bacillus. The colonies upon agar-agar reach a fuller development in shorter time than the real bacillus. They seem whiter and more opaque.

The above non-virulent bacilli were found up to the end of the fifth week after the onset of the illness and were isolated in pure culture and are in the possession of the writer. The attempt to find them in the tonsil six weeks after the onset of the illness resulted only in their identification in smear preparations upon serum; they were overgrown in twenty-four hours by staphylococci.

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* Measurements of the Loeffler virulent bacillus: Length, 2·2 μ to 5 μ; width, 0·6 μ to 0·8 μ. Some non-virulent bacilli (pseudo) of same case: Length, 2·6 μ to 4 μ; width, 0·6 μ to 0·78 μ. Involution forms, of course, vary widely from above.

Case II, in which the *virulent Bacillus diphtheriæ* is replaced in the same tonsil by a *non-virulent bacillus.*

This is Case III of the mild series of lacunar diphtheria cited in the first part of this paper (refer to history). The patient was seen four times, the second visit a day after the first. The tonsils had cleared, and the yellow streaks and lacunar appearances had disappeared; the tonsils were still red and enlarged. The *Bacillus diphtheriæ*, isolated from the right tonsil, had been found virulent.

Third visit a week after the first one, and the tonsils apparently normal in size and appearance: *no culture made.* Fourth visit, fifteen days after the first: tonsils normal; child well; a sterilized scoop entered into the lacuna of the right tonsil, behind the anterior faucial pillar, as near as possible to the place where the virulent bacilli had been extracted. A large, yellow plug, which had been invisible, was removed from the depths of this lacuna. From this plug there was obtained a luxuriant growth upon blood serum of a bacillus the exact counterpart of the non-virulent bacillus isolated from Case I above.

In the above two cases we have typical lacunar diphtheria in which no membrane was seen at any period of the disease, both of which cases were exceedingly mild in all their manifestations. In both cases the real bacillus—virulent—persisted for three weeks in one case and up to the second week in the other. The bacilli were all isolated from plugs of fibrinous exudate removed from the lacunæ and sown upon blood serum. The various sets of bacilli were kept separated, and tested and found all to be of a like virulence, as stated in another part of this paper. At the beginning of the fourth week in one case after the first isolation of virulent bacilli, and the beginning of the third week in the other case, these virulent bacilli of diphtheria were replaced by a bacillus which was in every way, except in growth upon agar and in bouillon, the most accurate counterpart of the virulent original bacillus. It was, however, in both cases a harmless, non-virulent bacillus. Loeffler, in his second article upon diphtheria, asserts that in a case of an adult he had found the virulent and the non-virulent bacilli growing side by side upon the agar plate, and had isolated both. In this way he accounted for the famous pseudo *Bacillus diphtheriæ* of Hofmann, saying that the pseudo bacillus was an accompanying harmless bacillus of the real micro-organism. Roux and Yersin found the non-virulent or pseudo bacilli in cases of membranous diphtheria which early in the disease had yielded the virulent bacillus. The writer's cases are the only ones in which the real and virulent bacillus was replaced in the same tonsil and, as near as could be judged, in the same locality, entirely by a rich growth of a non-virulent bacillus which the expert examination alone could only find the least remove thicker than the virulent bacillus, but of the same form and staining peculiarities. In order to be explicit, we wish to repeat that this bacillus is non-motile, grows more luxuriantly upon agar than the virulent bacillus and the bouillon cultures (peptone bouillon) are not acid, as in the real bacillus, but alkaline after forty-eight hours in the thermostat. The bouillon deposits a more abundant sediment than the virulent and is more diffusely clouded. Roux, Yersin, and Escherich have called attention to the early acidity of the bouillon cultures of the virulent bacillus (forty-eight hours), and the author has had ample opportunity to verify this important and invariable quality of the virulent bacillus. The non-virulent bacillus stains exactly like the virulent micro-organism both in Loeffler blue and Gram stains. As stated, it seems, when closely studied *side by side* with the virulent bacillus, broader than the latter. I doubt whether, in unmarked specimens, the writer's non-virulent bacilli could be distinguished by stain alone. We have the same clubbed and involuted forms shown by the virulent bacillus. I have noticed that it does not grow so luxuriantly in sugar bouillon as it does in the simple peptone bouillon. In the latter the shape of the non-virulent bacillus is more complete as a bacillus form after forty-eight hours than that of the virulent bacillus, which is often seen in abortive forms at this time in bouillon culture.

Animals do not react even to large doses (eight cubic centimetres of forty-eight hours' bouillon) of the non-virulent bacillus; a few guinea-pigs develop a slight œdema, which eventually disappears. After having received these large quantities of the non-virulent bacillus, four guinea-pigs were reinjected after the lapse of a week with half a cubic centimetre of the virulent bacillus with lethal effect in two cases within forty-eight hours; a third, in three days; and a fourth, an old, fully-developed pig, in four days. Thus the non-virulent bacillus was not a vaccine against the virulent bacillus. These experiments, it will be recalled, were also performed with the non-virulent bacilli isolated in four cases of the first paper on this subject by the writer with similar results.

The literature of the non-virulent or pseudo *Bacillus diphtheriæ* is still in its infancy. Hofmann, Loeffler, Escherich, Fraenkel, Welch, Abbott, and the writer of this article have studied it. Its rôle and exact place in the morphology of diphtheria are still a mystery. The German school of bacteriologists all unanimously agree as to its place among the harmless saprophytes. Fraenkel is an exception to this view and sides with Roux, who thinks that the non-virulent pseudo bacillus is a weakened form of the virulent bacillus and, under conditions not yet discovered, as stated was the case in charbon, may become a dangerous, virulent micro-organism.

In closing these studies upon diphtheria the writer wishes to emphasize the fact that the tonsil is an organ which possesses a circulatory activity hitherto not attributed to it. It was formerly looked upon as an anatomical appendage whose purpose was problematic. Stöhr has demonstrated the constant migration of leucocytes from the interior of the tonsil (follicles) to the surface, and therefore into the lumen of the lacunæ. The writer is inclined to believe that future work may reveal that the tonsil in this functional activity exercises a destructive influence upon pathogenic bacteria which may be on the surface of the tonsil or in the lumen of the lacunæ. Blood lymph and serum possess inherent destructive powers upon the life of bacteria (Nuttall, Buchner, Prudden). Leucocytes also have the power of attracting within their substance bacteria. Both these conditions exist in the tonsils. If we examine the lacunar plugs in lacunar diphtheria we find leucocytes which seem to contain within them cocci and bacilli. It may be that the prolonged retention of the *Bacillus diphtheriæ* for weeks in the depths of the lacunæ under the intimate influence of the above-mentioned phenomena of lymph and leucocyte activity may not be without effect on one phase of the vitality of the *Bacillus diphtheriæ*—its virulence. Such a theory as the above is offered with the greatest of diffidence in view of our limited knowledge of the actual relation of these two bacilli.

Full List of Cases examined for Lacunar Diphtheria, and which all presented the Typical Clinical Picture of an Acute Lacunar or Follicular Amygdalitis.

Case No.	Sex.	Age.	Glandular enlargements at angle of jaw.	Bacteriological results.	Animal experiments.
1	Male.	6 yrs.	Right.	Loeffler bacillus.	Virulent.
2	Female.	11 yrs.	None.	" "	Not tested.
3	"	11 yrs.	"	" "	Virulent.
4	"	4 yrs.	Left.	" "	"
5	Male.	5 yrs.	Both.	" "	"
6	Female.	4 yrs.	None.	Streptococcus.	
7	Male.	3 yrs.	"	"	
8	"	1½ yr.	Right.	Loeffler bacillus.	Virulent.
9	"	13 mos.	. . . . .	Streptococcus.	
10	Female.	4 yrs.	. . . . .	Pseudo bacillus.	Not virulent.
11	"	20 mos.	None.	"	" "
12	"	2 yrs.	"	Streptococcus.	
13	"	1 yr.	"	Roux's coccus.	
14	Male.	2½ yrs.	"	Pseudo bacillus.	Not virulent.
15	"	3 yrs.	Both sides.	Bacilli not pseudo.	" "
16	"	4 yrs.	Right.	Loeffler bacillus.	Virulent.
17	"	3½ yrs.	Both sides slight.	Bacilli not pseudo.	Not virulent.
18	Female.	22 mos.	None.	Bacilli not pseudo, streptococci.	" "
19	Male.	8 yrs.	Both.	Streptococci, staphylococci, Roux's coccus.	
20	Female.	1 yr.	"	Streptococcus.	
21	Male.	1½ yr.	None.	Roux's coccus.	
22	"	15 mos.	"	Loeffler bacillus.	Virulent.
23	"	11 mos.	"	Roux's coccus.	
24	"	2 yrs.	Right.	Loeffler bacillus, Roux's coccus.	Virulent.
25*	Female.	13 mos.	Both.	Loeffler bacillus.	" "
26	"	15 mos.	Left.	Streptococcus, staphylococcus.	
27	Male.	5 yrs.	Both.	Streptococci, staphylococci.	
28	Female.	4 yrs.	Both.	Streptococci, Roux's coccus.	
29	Male.	3½ yrs.	. . . . .	Streptococcus.	
30	Female.	3 yrs.	. . . . .	"	
31†	"	2½ yrs.	None.	Loeffler bacillus.	Lost; not tried on animals.
32	"	11 mos.	"	Streptococci.	
33	"	3 yrs.	. . . . .	Loeffler bacillus.	Virulent.
34	Male.	5 yrs.	. . . . .	Streptococcus, Roux's coccus.	
35	Female.	2½ yrs.	Both.	Streptococcus, Roux's coccus.	
36	Male.	6 yrs.	None.	Streptococci.	
37	"	17 mos.	"	"	
38	"	4½ yrs.	"	Staphylococci, streptococci.	
39	"	6 yrs.	Left.	Staphylococci, streptococci.	

* Marked Case V in paper. † Sister to patient in Case I in paper.

NOTE.—The experimental work of this paper was carried on in the Carnegie Laboratory.

Authorities referred to in the text.

Abbott, A. C. *Johns Hopkins Bulletin*, August, 1891.

Buchner, H. Abstracted in Baumgarten's *Jahresbericht*, 1888.

Escherich, T. *Berlin. klin. Wochen.*, Nos. 21 and 23, 1893.

Fraenkel, C. *Deutsche med. Wochen.*, 1893.

Henoch. *Deutsche med. Wochen.*, 1889, 897.

Hofmann. *Wiener med. Wochen.*, 1888, Nos. 3 and 4.

Heubner. *Jahrb. f. Kinderheilk.*, Bd. xxx, Heft 1 and 2.

Loeffler. *Deutsche med. Wochen.*, 1890; *Ctrlbl. f. Bakt.*, 1887, vol. ii, p. 105.

Nuttall. *Zeitsch. f. Hygiene*, Bd. iv, 1888.

Pasteur. *Comptes rend.*, *Acad. sci.*, 1881.

Prudden, T. M. *Medical Record*, 1890.

Roux and Yersin. *Annal. de l'Instit. Pasteur*, Bd. iv, 1890, *et seq.*

Stöhr, Phillip. Virchow's *Archiv*, vol. xcvii, p. 211.

PERFORATION OF THE APPENDIX VERMIFORMIS BY A WHITE BEAN.

REMOVAL OF THE APPENDIX AND A PART OF THE OMENTUM.

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I WAS called by Dr. P. B. Le Blanc to see F. W. F., a salesman, aged twenty-five years, who had been under the doctor's care for four days. He began to complain of pain in his bowels, with diarrhœa, twenty-four hours before the doctor saw him. He then had severe pain in the right side of the abdomen, and it was so severe that full doses of morphine were required to relieve it. He had fever also; his tongue was coated and pulse accelerated. Poultices were applied to the abdomen and hope expressed that the symptoms would soon disappear. On the contrary, however, he grew worse. Vomiting commenced and quantities of greenish fluid mixed with mucus were ejected at intervals of two or three hours. Medicine had no effect in controlling the nausea. Liquid foods were thrown up as soon as taken. His eyes sank into their sockets and dark circles appeared about them. His pulse and temperature did not vary materially from 90 beats and 101° F. We found the right side of the abdomen generally slightly tender on pressure. At a point midway between the anterior superior spine of the ilium and the umbilicus a sensation of unusual resistance was imparted to the fingers, unlike anything that could be felt in other regions of the abdomen. We decided that an operation was imperatively called for, to anticipate the collapse which the symptoms above described and the patient's general condition surely indicated. The situation was explained to him. He is a young man of marked intelligence and said that our view of his case corresponded with his ideas of his illness. He had "read in the newspapers of diseases and seeds in the blind sac of the intestine, and he thought he ought to have an operation performed." His language is quoted as nearly as it can be recalled here for the purpose of showing the clearness of his mind, notwithstanding the gravity of his symptoms.

Dr. C. B. Storrs was called to assist us. We had the patient's abdomen washed with soap and water, had him placed on a table, and gave him chloroform until he was anæsthetized.

While his father held a lamp to illuminate the field of operation we cut a wound two inches long through the skin, fat, and fascia, over the most unyielding point we could find between the right anterior superior spine of the ilium and the umbilicus. Then we separated in turn the fibers of the external oblique, internal oblique, and transversalis muscles and exposed the peritonæum, holding the parts asunder with retractors. The parts adjacent to it were slightly œdematous. We incised it and introduced our finger. Immediately a quantity of foul-smelling pus spurted out. Exploring this abscess cavity with our finger, we soon found the appendix vermiformis with a large perforation, through which could be felt a hard substance which, on removal, we found to be a white bean. We drew the appendix up through the abdominal wound, ligated it with strong silk close to the cæcum, and cut it off. But one perforation was found in it, and that was just large enough to transmit the bean. The appendix was very dark in color, stained by the fæcal gases and pus.

Exploring the abscess cavity again with our finger, we found a tag of omentum very much blackened and about two inches and a half in length; this we ligated and removed. We next introduced a piece of nursing-bottle rubber tubing, five inches in length, perforated at intervals of an inch, into the deepest part of the abscess cavity, and around it packed loosely ten-per-cent. iodoform gauze. The wound was now covered with several layers of ten-per-cent. iodoform gauze, a thick layer of sterilized cotton, and an abdominal bandage. No sutures were used. The muscles were not cut. The wound through them and the peritonæum was just large enough to admit one finger.

The patient was placed in bed with warm bottles to his feet, though there was no coldness of his extremities, nor was the rate and rhythm of his pulse materially changed by the procedures just described. Anæsthesia passed off gradually. He came to his senses and expressed himself relieved of the pain which had disturbed him constantly since he was first taken sick. The dressings were not removed for two days; then Dr. Le Blanc took off the cotton and gauze, which were soiled with pus, and injected a teaspoonful of peroxide of hydrogen (fifteen-volume solution) through the tube and cleansed the abscess cavity. Gauze and cotton were reapplied. This dressing was repeated daily for a week. The gauze which had been inserted with the tube was then removed, the cavity was again washed out with a fifteen-volume solution of peroxide of hydrogen, which foamed freely from the wound; the tube was reinserted; the muscles from day to day grew snugger about it, and at the end of two weeks, pus no longer discharging, it was withdrawn, and a few days later the wound closed.

The writer thinks it is of great advantage to treat the muscles in this operation without cutting them. Two important purposes are gained by this method—viz., first, less risk of infection through the wound; second, less danger of subsequent ventral hernia. In fifteen consecutive cases for malignant appendicitis he has treated after this method within the past six months every patient has recovered health, and each has a perfectly cicatrized and sound abdominal wall.

The Erie County Hospital.—A competitive examination will be held at the hospital, Buffalo, about March 15th, to fill the positions of house physician, assistant house physician, and assistant house surgeon. The hospital contains three hundred and fifty beds and is the largest in the city of Buffalo. Full particulars about the examination and the positions can be obtained from the secretary, Dr. Francis T. Metcalfe, No. 329 Franklin Street, Buffalo.

A CASE OF SITUS VISCERUM INVERSUS.

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Although numerous cases of situs viscerum inversus have been reported, the majority of these have been cases in which the condition was discovered only after death, at the post-mortem or dissection table. The discovery, therefore, of this anomaly in a living adult may become worthy of note because of the interest attached to the physical signs. Such a case having been discovered and thoroughly studied in our classes of physical diagnosis, I have considered it worth while to present a brief outline of the physical signs arising from such a condition.

The patient, Mr. A., is fifty-one years of age, an American, and a farmer. There is a history of epilepsy in the father's family. No other cases of abnormity in the family. As a child he was not strong. Is subject to epileptoid attacks, closely connected with gastric disturbances. For the last two years he has had diabetes mellitus.

Is of tall and slender frame; muscles poorly developed. Is *left-handed.* Patient himself has never suspected his condition, though he says his wife had told him that his heart was on the right side.

On inspection, a diffuse pulsation is seen on the right side in the fifth intercostal space, strongest just outside of the right parasternal line, and most plainly seen during expiration. This pulsation could be made evident to a large class by placing a flag upon the spot of strongest impulse. The shock of heart can be felt on the right side between the third rib and fifth interspace. Over the normal heart area on the left of the sternum no pulsation can be seen or felt.

Percussion boundaries show as a mirror image of those in the normal body, being completely reversed. The area of absolute heart dullness begins on the upper border of the fifth rib in the right sternal line and extends out almost to the apex beat, and to the median line over the sternum. It is continuous below with dullness extending to the left from the right sternal line. The area of relative dullness begins on the fourth rib, runs downward across the sternum, meeting relative liver dullness in the fifth intercostal space in the left sternal line. There is no dullness in the normal heart area on the left of the sternum.

The lower lung boundaries are on the seventh rib in the nipple lines. An attempt to locate the boundaries of the lobes of the lungs by means of auscultatory percussion, which in our hands has never given the satisfactory results obtained by some others, seemed to show that the lungs were also reversed—three lobes on the left side, two on the right. As further proof of this, vocal fremitus is stronger left than right; and auscultation shows that posteriorly over the bronchi the bronchial breathing is stronger on the left than on the right side.

In the area of normal liver dullness, beginning in the right nipple line on the seventh rib and extending between the right anterior axillary and sternal lines, there is a clear tympanitic note on percussion resembling that of the stomach. This extends two fingerbreadths below the edge of the ribs in the right nipple line, and curves up to the eighth rib in the anterior axillary. The lower lung boundary on the right side anteriorly is, therefore, a clear tympanitic tone, instead of the normal liver dullness.

Inflation of the stomach with CO_2 shows that this organ does lie in this area of tympanitic percussion sound, the inflated stomach rolling out from under the right edge of the ribs, filling in the right hypochondrium and right half of the epigastrium. Auscultatory percussion over this area gives the characteristic shock and silvery stomach tone. Succussion sounds can be also produced in this region, and the gurgling sounds produced in the stomach are heard in this region and not upon the left side.

There is a slight curvature of the dorsal vertebræ toward the *left* side, and upon auscultation, while the patient is drinking, the œsophageal gurgling is much louder upon the right side than upon the left, indicating that the position of the œsophagus is to the right of the spinal column.

Upon the right side, in the anterior and middle axillary lines, there is dullness extending from the seventh to the ninth rib, in size and shape corresponding to that of the spleen.

An area of absolute dullness corresponding to that of the liver begins in the left sternal line on the upper border of the seventh rib; in the left nipple line, on the same; in the middle axillary line, on the ninth; posteriorly, on the twelfth. The right border of this area of dullness is formed by the right sternal line. In the median line the lower border is four fingerbreadths below the ensiform; in the left nipple line it is at the edge of the ribs. Above, on the right, this dullness is continuous with heart dullness. The half-moon-shaped space is thus filled in by dullness, which descends on inspiration, and in form and size corresponding to the area of liver dullness.

No heart sounds can be heard in the region of normal apex beat. On the right side, over the pulsation described above, they are distinctly audible. First sound, impure; second, normal. There is a faint diastolic sound in the right second interspace; one slightly louder in the left second interspace.

There is constant tympanitic note in the left iliac region, and inflation of the large intestine shows reversed arrangement, the sigmoid flexure and descending colon being on the right side.

The right testicle hangs much lower than the left, and there is a slight varicocele of the right spermatic veins.

These form the interesting combination of physical signs from which the diagnosis of complete *situs viscerum inversus* was made and are valuable because of their completeness.

The case was also exhibited in Dr. Dock's clinic of internal medicine, and the following points were there discussed: The existence of left-handedness, which has not been observed in all of the cases previously reported; the relation of the dorsal curvature to muscular action or to the position of the aorta and the œsophagus; and the position of the right testicle with coexistent varicocele (it is not at all uncommon to find the right testicle lower than the left in persons of normal development). It was also suggested that it was probable that the condition was much more common than was generally supposed, since to many dissecting laboratories one or more such cases came in the course of a year.

The Colorado State Medical Society.—We have been asked to announce that members of the American Medical Association are cordially invited by the Colorado State Medical Society to stop in Denver on returning from the coast and attend the meeting of the society on June 19th, 20th, and 21st. Members who expect to return *via* Denver are invited to correspond with the secretary, Dr. A. Stewart Lobingier, Denver, that invitations to participate in the proceedings and proper entertainment may be arranged.

THE
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THE IMMEDIATE CAUSE OF CONVULSIONS IN CHRONIC NEPHRITIS.

When convulsions occur in an adult who is not the subject of chronic epilepsy or of hysteria, the urine is to be examined at once. If albumin is present, and especially if casts are found, the physician diagnosticates uræmia, and accepts this as a sufficient explanation of the onset of the convulsions. But this inference is insufficient. Why should a patient with chronic nephritis have a sudden outbreak of convulsions when the kidney disease is apparently no more intense than it has been for months or years past? Would not the ability of the human system to accommodate itself to slow disease-changes protect the patient from sudden outbreaks in chronic disease? If there is no sudden, marked change in the unwholesomeness of the blood that nourishes the nerve centers, why should nerve explosions occur?

Careful thought on these questions may convince our readers that in cases of nephritis pursuing an even, chronic course the occurrence of convulsions ought to lead to a search for acute intercurrent conditions elsewhere than in the urinary tract, and that the correction of these intercurrent conditions may be expected to relieve the patient of the convulsive status and to secure him against subsequent repetition of the paroxysms. These intercurrent conditions may be sought for in various regions of the body and in different functional disturbances. During childbirth the nerve irritation of inefficient attempts to expel the fœtus may bring on an eclamptic attack which would never have occurred, even in the presence of chronic Bright's disease, had the labor proceeded swiftly or been promptly terminated by instrumental interference. In other patients, not parturient, excessive mental anxiety or physical overfatigue may excite convulsions when without these exciting conditions nephritis would have gone on for years without sign of spasm.

Disturbances of the digestive tract are well known as tending to precipitate convulsions in the chronic epileptic; and it is very probable that acute disorders of this tract, whether arising from "catching cold," with its inward congestions and check of secretions, or from the ingestion of unwholesome food, or from constipation, are often the immediate exciting causes of convulsions in patients with chronic nephritis.

The influence of such acute disorders of the digestive processes upon the ever-sensitive convulsive centers in childhood is universally admitted; and there are reasons for believing that in chronic nephritis of the adult, where the nervous system is in an abnormally sensitive state, these same centers may in like manner be stirred to sudden explosive action, either by reflex irritation from the nerve-endings of the intestinal canal or through the absorption of abnormal digestive or fermentative products into the circulation and consequent excitement of the convulsive nerve matter.

When, therefore, convulsions occur in chronic nephritis, we should look beyond the chronic condition and seek for an acute intercurrent cause; and, if that is found, we should, without neglecting the treatment of the nephritis, devote proper attention at once to the removal of this exciting cause.

THE QUIZ SYSTEM.

It must be accepted as a self-evident fact that the object of a professional school is so to prepare and instruct its students that, after graduation, they shall be properly qualified to practice the profession for which they were trained. This object the schools more or less perfectly attain by means of didactic lectures, and, as tests, use examinations. To these essential elements of professional education are sometimes added demonstrations, practical work, clinical teaching (in the case of the medical schools), and sometimes recitations.

It would seem as if by these methods all possible means and aids to education were provided, and it is certain that by them alone many a man is educated and fitted for a life of professional usefulness and brilliancy, yet there has sprung up beside but independent of these courses of instruction a system of supplementary and private instruction of which a large number of professional students avail themselves. This is the tutoring or "quiz" system.

Many arguments have been brought to bear against this system, and perhaps the most valid is that, if a school pretends to educate its students properly, it should be unnecessary for them to have instruction without its walls. Theoretically this may be unanswerable; practically it is absurd, and many a bewildered but otherwise able man has been tutored into grasping ideas he had failed to grasp in the lecture room. But, if it is true that all professional schools should by their very existence (if they are what they should be) inhibit quizzing or tutoring upon their courses, then are we at a sorry pass indeed, for it is probably true that there is not an academic, scientific, or professional school in the world in which this system does not appear to a greater or lesser extent. But, again, say the critics, if this system is so widespread and therefore presumably so important, the school itself should do the quizzing, else it fails in its duty. Theoretically, again, perhaps correct; practically, impossible, for no school could by any chance divide its students up into such small groups as is done in private quizes. And thereon depends the whole question. It is the personal association and acquaintance between master and student that makes the system of tutoring what it is—the personal coaching and supervision of the quiz-master for the student, whom he studies and knows.

True, there are many students who are unable to avail themselves of these advantages, and to them the system may seem unjust and but another luxury they must deny themselves. But, if it is a luxury, the school provides the necessities, and on educational necessities alone have many of our greatest men been brought up.

If the quiz system has critics, so has it advocates who regard it as a beneficial and proper, though accessory and, strictly speaking, unnecessary, adjunct to teaching in the professional school; who, in reply to the demand that a college shall render a quiz impossible by its own "required" recitations, hold the "university" idea and say that to offer instruction, not to compel it, is the function of a professional school.

In advocating the quiz system we may lazily and indolently commit ourselves to the fallacy that what was good enough for our fathers is necessarily good enough for us, we may point to the failure of attempted "college quizes"; but after all is said the surest proof of the value of the system is not its survival but its growth.

MINOR PARAGRAPHS.

AN ABORTIVE TREATMENT OF CORYZA.

Dr. J. Gerard, in *La Médecine moderne*, reports some very good results which he has obtained by the use of inhalations of chloroform in arresting the extension of coryza to the bronchial tubes. He at first employed a mixture of carbolic acid and ammonia, but this was finally replaced by chloroform, which was found to act much better. The inhalation is to be practiced several times up to the point of the first signs of anæsthesia. When this has been done at the time the first nasal symptoms appeared, no further extension of the affection has occurred. In epidemics of coryza and influenza, even in cases where the catarrhal condition was severe, the author has seen the disease aborted.

HYSTERICAL MENORRHAGIA.

M. Rigal, in the same journal, says that there are many more cases of simple menorrhagia, where the flow may be very abundant and painful, due to hysteria than is generally supposed. In these cases the patients are perfectly well during the interval. Examination during the attack reveals intense congestion of the uterus and ovaries, and in some instances the ovaries are easily palpated. The symptoms in some cases are very severe—great pain, convulsions, and profuse hæmorrhage. These patients recover very rapidly after an attack, and nothing remains of the congestive condition. Such cases occur mostly in young, highly emotional women.

LACTOPHENINE.

At a recent meeting of the Paris *Société de biologie*, a report of which is published in the *Union médicale* for February 10th, it was stated that M. Londowski had experimented on a number of patients in M. Proust's service with a substance allied to phenacetine which he called lactophenine. This body is at once antineuralgic and hypnotic, and may be employed in daily amounts of from ten to forty-five grains, in divided doses. The only after-effects observed, and those are by no means constant, are a little sweating and giddiness.

THE ACTION OF POISONS ON THE FŒTUS.

La France médicale contains a report of a recent meeting of the *Académie de médecine* at which M. Porak gave the results of extended experiments on the placenta with various substances. He concludes that arsenic, copper, atropine, phosphorus, mercury, and alizarin do not pass through the placenta, but that copper and mercury have a cumulative and elective action upon that organ. The poisons accumulate in greater quantities in the tissues of the fœtus than in those of the mother, and their diffusion also is greater in the fœtus, for they are found in the liver, in the central nervous system, and in the skin, while in the mother they are found almost exclusively in the liver.

A PROPOSED BUILDING FOR PHYSICIANS' OFFICES.

Elsewhere in this issue we give the leading points of a scheme for the construction and management of a large office building for the almost exclusive use of physicians. This will be a novelty in New York, where a physician's office is almost invariably a portion of his residence. There is much to be said in its favor, especially as a means of enabling the younger members of the profession to economize and at the same time enjoy the advantage of office accommodations far superior to what they could hope to obtain in much more expensive quarters in a dwelling. If it is prudently managed, we have no doubt the experiment will prove successful.

THE CONGRESS OF NORWEGIAN PHYSICIANS.

This congress was recently convened at Christiania, but, instead of hiring a hall in which to hold the daily sessions, it chartered a large steamer, which moved from place to place along the coast. The members were thus enabled to have a plentiful supply of fresh air and a change of scene while continuing their discussions of medical subjects.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 6, 1894:

DISEASES.	Week ending Feb. 27.		Week ending Mar. 6.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	0	0
Typhoid fever	9	2	5	3
Scarlet fever	134	12	184	15
Cerebro-spinal meningitis	2	1	0	2
Measles	430	31	478	27
Diphtheria	188	61	203	52
Small-pox	37	9	23	3

The New York Hospital Library.—Among notable gifts of books that have been made to the library recently are that of nearly two hundred volumes from the library of the late Dr. Gurdon Buck, presented by his son, Dr. Francis D. Buck; and that of Dr. D. B. St. John Roosa's collection of otological books. Dr. Roosa, who was formerly on the house staff of the hospital, gave these books in anticipation of the provisions of a will, made by him some time ago, whereby the library was to receive his medical books.

The Western Reserve (Ohio) University.—The commencement exercises of this institution were held at Cleveland on February 28th, and a class of twenty-one was graduated. An address was delivered by Professor William H. Welch, of the Johns Hopkins University, on Higher Education in Medicine. The university was the recipient of donations amounting to $300,000. Of this amount, $257,000 was for the erection and equipment of a physical laboratory. The degree of LL. D. was conferred upon Professor Welch and upon Dr. J. C. Reeve, of Dayton, Ohio, an alumnus.

The Society of Medical Jurisprudence.—The special order for the next meeting, on Monday evening the 12th inst., at the Academy of Medicine's building, is a paper on Hypnotism, Insanity, and Legal Responsibility, by Mr. Charles M. Demond, of the New York bar.

The German Medical Society of the City of New York.—At the last meeting of the Deutsche medicinische Gesellschaft der Stadt New York, on Monday evening, the 5th inst., Dr. S. J. Meltzer was to read a paper on Myxœdema, and Dr. S. Breitenfeld one on Sexual Impotence and its Cure.

The Association of Military Surgeons of the United States will hold its fourth annual meeting in Washington on the 1st, 2d, and 3d of May, under the presidency of Dr. Nicholas Senn, of Chicago.

The City (Charity) Hospital.—The regular examinations of candidates for appointment as junior assistants on the house staff will be held at the hospital on Thursday, the 15th inst., at 2 P. M.

The Cleveland Medical Society.—The programme for the meeting of Friday evening, the 9th inst., included the following papers: Bladder and Ureter Work in the Female, by Dr. Howard A. Kelly, of Baltimore; and Hypnotism, by Dr. M. J. Parke.

The Death of Professor William Leishman, the distinguished Glasgow obstetrician, is announced in the *Lancet* as having taken place on Sunday, February 18th. He was in his eightieth year.

The Death of Dr. Henry C. Cooper, the clerk of the faculty of the Medical Department of the University of the City of New York, is announced as having occurred suddenly on Sunday, the 4th inst. The deceased was a graduate of the school of the class of 1881.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending March 3, 1894:*

Ashbridge, Richard, Passed Assistant Surgeon. Dismissed from the naval service February 28, 1894, by the President's approval of the sentence of general court-martial.

Cabell, A. G., Passed Assistant Surgeon. Ordered to the U. S. Steamer Michigan.

Sayre, J. S., Passed Assistant Surgeon. Detached from the U. S. Steamer Michigan and ordered to the Naval Hospital, New York.

Broderick, R. G., Assistant Surgeon. Detached from the Naval Laboratory and Department of Instruction and ordered to the Naval Hospital, Mare Island, California.

Society Meetings for the Coming Week:

Monday, *March 12th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society (private), New York; Society of Medical Jurisprudence, New York; Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, *March 13th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Kings County, N. Y., Medical Association; Medical Societies of the Counties of Chemung (quarterly—Elmira), Rensselaer, and Ulster (quarterly), N. Y.; Newark, N. J., Medical Association; Trenton, N. J., Medical Association (private); Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Baltimore Gynæcological and Obstetrical Society; Practitioners' Club, Richmond, Ky.

WEDNESDAY, *March 14th:* American Microscopical Society of the City of New York; Metropolitan Medical Society (private), New York; New York Pathological Society; New York Surgical Society; Medical Societies of the Counties of Albany and Montgomery (quarterly), N. Y.; Pittsfield, Mass., Medical Association (private); Worcester, Mass., District Medical Society (Worcester); Philadelphia County Medical Society.

THURSDAY, *March 15th:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, *March 16th:* New York Academy of Medicine (Section in Orthopædic Surgery); Baltimore Clinical Society; Chicago Gynæcological Society.

SATURDAY, *March 17th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Eighty-eighth Annual Meeting, held in Albany, on Tuesday, Wednesday, and Thursday, February 6, 7, and 8, 1894.

The President, Dr. HERMAN BENDELL, of Albany, in the Chair.

(*Continued from page 184.*)

Diphtheria.—In the continuation of the discussion of this subject, Dr. THOMAS E. SATTERTHWAITE, of New York, said that he believed that membranous croup and laryngeal diphtheria were histologically one. The value of the bacteriological work in this field could not be questioned. To it we were indebted for the discovery of the toxines, antitoxines, albumoses, and bacilli pertaining to the disease, but he was not quite prepared to admit all that had been asserted by the bacteriologists. The virus of diphtheria was very persistent, retaining its vitality a long time, which accounted for the diffusion of the disease as an epidemic.

Dr. A. JACOBI, of New York, took issue with those who objected to the local treatment of diphtheria. He agreed with those who advocated large quantities of alcohol. The latter was not a toxic agent until the period of convalescence was reached. Tincture of chloride of iron was a tried and standard remedy, but it was not equally well tolerated by all stomachs. The bichloride of mercury, in solutions of 1 to 6,000 or 1 to 8,000, was readily tolerated almost invariably, and in his judgment was the most valuable of all the remedial agents employed.

Dr. WOOD, of Richmond County, had found great satisfaction in the use of inhalations of tar and turpentine, which had not been mentioned by any of the previous speakers.

Dr. H. R. HOPKINS, of Buffalo, advised the use of alcohol *per rectum* for very young infants, with whom the same agent would not be tolerated by the stomach.

Dr. SEYMOUR, of Troy, hoped that the recommendation in Dr. Suiter's paper, that the diagnosis of suspicious or supposed cases of diphtheria be referred in each county or town to the appropriate health official, would be formally indorsed by the society.

Dr. BAILEY expressed his preference for calomel rather than corrosive sublimate as the best agent thus far available in the treatment of diphtheria.

Treatment of Depressions in the Skull of the New-born.—Dr. DAVID D. JENNINGS, of New York, believed that the plan of leaving the cure of these cases to Nature was not justifiable in the present age of advanced cerebral surgery, for, while some cases ended in recovery and the infants suffered no serious consequences, many cases of hemiplegia, epilepsy, and impaired intellect resulted, and the deformity, especially in the frontal indentations, often persisted. Many of these infants died shortly after birth, and raising the depressed bone by the operation of trephining would have saved some of them, besides anticipating subsequent cerebral trouble. Dr. Jennings successfully trephined the skull of an infant, forty hours old, for a marked depression of the left frontal bone, the boss frontis presenting a concavity equal to the usual convexity. After the surrounding bone had been lifted into position with an elevator, the removed button was replaced, and the wound closed with catgut sutures and drainage. Antiseptic dressings were applied, and the infant was soon quietly nursing at its mother's side.

The operation was simple and apparently without shock. No anæsthetic was employed, and it was not necessary to tie a vessel. The wound healed by primary union, and the infant made an uneventful recovery.

The following conclusions were offered:

1. Use pneumatic traction. If this failed, trephining was the best operative procedure.
2. Trephining, *per se*, was not a dangerous operation.
3. The removed button of bone could be replaced with good prospect of its union on account of the vascularity of the bones at this age.
4. Frontal depressions rarely corrected themselves.
5. Immediate action was desirable, if there were symptoms which indicated operation.
6. If the depression was still exaggerated at the end of two weeks, an operation to prevent subsequent brain trouble and overcome the deformity should be performed.

Dr. ANDREW F. CURRIER, of New York, called attention to the theory which Marion Sims advanced many years ago, that convulsions in the new-born infant were the result of the prone position with pressure on the occipital bone. That theory had not been generally accepted. Dr. A. Jacobi had also called attention in more recent years to the influence of cranial pressure in prolonged labors in producing impairment of cerebral and mental development. In the cranial injuries resulting from obstetrical operations the speaker's observation had been that convulsions and early death were the almost uniform result. That would tend to deter him from performing such an operation as trephining upon the new-born. He did not doubt, however, that there were cases in which the operation was indicated and could be performed successfully. The case under discussion was one of that character, and he congratulated the reader on his success, as well as the manner in which he had treated the subject.

Dr. CARTER S. COLE, of New York, observed that it was not the depression of cranial bone so much as the injury to the membranes and cerebrum which called for operative treatment, and thought that surgical injury in operation would be minimized by using the chisel and mallet rather than the trephine. With such instruments there would also be the least possible loss of cranial substance.

Dr. A. M. PHELPS, of New York, approved of operation in such cases as were under discussion, and trephining in preference to the use of chisel and mallet. He narrated cases and presented photographs of patients in which epilepsy had been relieved by such treatment.

Senile Endometritis.—A paper with this title, by Dr. A. J. C. Skene, of Brooklyn, was read by Dr. Buckmaster. The prevailing opinion that the senile uterus was subject only to malignant disease was not true. Certainly it was rarely susceptible to gonorrhœa and other acute infectious diseases, which were so common in early life. The form of endometritis which was not uncommon in the aged was quite different from the endometritis of earlier life. This was due to the histological changes of an atrophic character which had taken place in the organ. The entire mucosa might be involved, or only that of the portio vaginalis. The most noticeable symptom of the disease was an offensive sero-purulent discharge. There was also stricture, more or less pronounced, at the os internum, and sometimes at the os externum. This would cause intermittence in the appearance of the discharge, and that characteristic would be the more marked if the uterus were retroflexed. In addition to retroflexion as a causative condition might be mentioned myomata of the uterus. In addition to the discharge there might be acute pain, especially with stenosis at the os internum. Aspiration of the uterine cavity was sometimes necessary in order to settle the diagnosis. The treatment was not always satisfactory or as efficient as might be desired, and might consist in the free use of hot disinfecting solutions to the vagina and uterine cavity; astringent tampons in the vagina, especially of iodoform, and peroxide of hydrogen; also, if fissure of the os was present, trachelorrhaphy. If the disease was complicated with prolapse of the uterus, hysterectomy might be required and would be warrantable.

The Treatment of Endometritis.—Dr. H. E. Hayd, of Buffalo, regarded this disease as of unusual importance from the fact that it was initial to so many of the diseases of the pelvic organs. It might be acute, subacute, or chronic, and involve the entire endometrium or that of the cervix or the corpus alone. The treatment of the acute form should consist in dilatation, irrigation, curettage, tamponade with gauze, and, what was quite as important, rest in bed, with the use of easily digested food and especial reference to an open condition of the bowels.

The subacute form was frequently caused by fissure of the os, and required, in such cases, suitable operative procedures in addition to the use of suitable local astringents, including galvanism. It was scarcely necessary to insist that all means of treatment should be employed with the utmost cleanliness.

In the chronic form of the disease there very often was extension to the tubes, ovaries, and peritonæum, and if the tubes and ovaries became at all involved the question of an abdominal operation was always to be borne in mind. Conservatism should be the rule, however, and the more serious operation should be deferred until it was determined that curettage and drainage would not suffice.

Dr. W. E. Ford, of Utica, was an advocate of the use of galvanism in all cases in which the peritonæum or the tubes were not seriously diseased. It was not indicated in cases in which there was pus in the tubes or in cases in which perimetric adhesions seriously impaired the mobility of the uterus. If curettage was performed, he thought the dull was usually preferable to the sharp curette, and if the uterus was tamponed, the tampon should not be too firm, as drainage would then be imperfect.

Normal Menstruation.—A discussion on menstruation and its abnormities was introduced with a paper on this subject by Dr. Andrew F. Currier, of New York. (To be published.)

Dysmenorrhœa, its Causes and Treatment.—Dr. Howard A. Kelly, of Baltimore, insisted that dysmenorrhœa was no disease, though often regarded as such by the general practitioner. It was simply pelvic pain associated with pelvic congestion, and was a symptom common to numerous diseases. Its frequency was seen in the fact that, of four hundred cases in which he had performed abdominal section in women, dysmenorrhœa had been reported as a troublesome symptom in two hundred and ninety-one. In more than half the cases in which the minor pelvic disorders were present, dysmenorrhœa was associated. Of fifty-two cases in which retroflexion of the uterus had been pronounced, dysmenorrhœa had been annoying in forty-one. The symptom was also annoying in many cases in which small tumors of different varieties were found in the pelvis, and in many women who were neurotic and hysterical. The habitual prescription of morphine as a means of relieving such trouble was immoral unless the pain was associated with gross pelvic lesions. For the treatment of dysmenorrhœa in young girls, reliance should be placed upon proper diet and hygiene, rest in bed during menstruation, and suitable medication to keep the bowels freely open.

The speaker believed that the local treatment of young girls for this symptom was usually unnecessary and inadvisable. In general it might be said that dysmenorrhœa would be relieved when the local cause producing it was removed: this might imply the removal of the uterine annexa. He was prepared to advocate such an operation, even if the organs were without gross lesions, if the health of the individual was being wrecked by the persistently recurring pain. Dilatation of the uterus was useful as a means of treatment in many cases. A cure was produced by such means in about ten per cent., while in a much larger percentage the relief obtained was considerable.

Profuse Menstruation.—Dr. Charles P. Noble, of Philadelphia, said that the causes of this condition were many and might be either local or general in character. It was also a suspicious symptom with women who had passed their fortieth year, for then was the period of degeneration and development of malignant disease. The idea was now an exploded one that profuse menstruation during the period of the menopause was necessary and of no consequence. It had often happened that cancer of the uterus developing during the menopause had been overlooked by the physician until the time had gone by when a radical cure was possible. Profuse menstruation in young women, on the other hand, was, as a rule, the sign of endometritis in one or another of its various forms. There was no routine treatment for the cure of this condition; each case was to be studied and treated by itself. As physical weakness was an almost inevitable attendant, it was a good rule to prescribe strychnine, digitalis, and ergot, and, while this treatment might suffice for some cases, it would be more consistent with scientific accuracy to follow it up in all cases with a careful physical examination to determine the exact condition of the pelvic organs. Pelvic congestion alone seldom caused profuse menstruation, but it predisposed to it, and hence was of significance. If the cause was found to be endometritis, curettage was indicated; if malignant disease, hysterectomy as early as possible. A sufficient time should be allowed when possible to improve the patient's general condition in preparation for the major operations. One of the preparatory or palliative operations which would sometimes be found useful consisted in the ligation of the uterine arteries *per vaginam*. Another useful measure was the application of strong caustics to the endometrium followed by tamponade of the cavity. This would bring away a slough composed of more or less of the structure of the uterus. The measure was somewhat dangerous, especially for cases in which the annexa had not previously been removed. In young virgins the condition was usually functional and was due to rapid growth at the period of puberty. In such cases it was usually curable without operation. In childbearing women it was usually due to some fault at or subsequent to parturition, and operative treatment might be necessary to relieve it. The important facts to be remembered were, that, when it occurred subsequent to the fortieth year, it might be expected to indicate approaching malignant disease; that examination to detect its cause was requisite in all cases, except occasionally among the young and unmarried; and that, if it was simply an indication of pelvic congestion, it could often be effectively treated by general measures.

Scanty Menstruation.—Dr. Franklin Townsend, of Albany, read a paper with this title. (To be published.)

Irregular Menstruation.—Dr. E. W. Cushing, of Boston, considered first the irregularities of the establishment of menstruation at puberty. These consisted in some cases in profuse hæmorrhage, and in others in scanty, delayed, or omitted menstruation. A certain amount of irregularity was to be expected, both at this period and at the menopause, and it was to be enjoined upon girls with whom the function was being established that study should not be too severe or confining, and that as much time as possible should be spent in the open air in the enjoyment of healthy exercise. As to the diagnosis between irregular menstruation and other bloody discharges from the vagina, first in importance were the sudden and severe hæmorrhages at or near the menstrual epoch, or the total suppression of menstruation due to inflammation of the appendages and of the fundus uteri, which were usually ascribed to "catching cold." Many troubles, even such as were serious in character, might follow such an attack. Irregularities were also associated with subinvolution of the uterus, and were frequently susceptible of relief only by surgical measures. Extra-uterine pregnancy also had associated with it irregularities of menstruation; in fact, this might be the first symptom calling attention to the condition. The peculiarities of the flow of blood were such that the patient seldom knew whether she was pregnant or not.

Irregularities during the middle period of married life were quite common among those who had been repeatedly pregnant and had had household cares in abundance. It was of great importance that such cases should be carefully followed and the presence of disease of more or less serious character discovered in time to treat it effectually. Myoma uteri at such a period was most likely to be troublesome, and the effort should be made to distinguish it from other conditions at the earliest possible moment. Irregularities due to the presence of fissured or lacerated cervix were often relieved by the performance of trachelorrhaphy.

Besides cancer, the occurrence of irregular hæmorrhages, especially in cases in which it was supposed that the menopause had occurred, was suggestive or indicative of malignant adenoma. The condition might also be due to diseases of the heart, violence of the emotions, sexual excitement, etc.

The Menopause, Natural and Artificial.—Dr. Arthur W. Johnstone, of Cincinnati, remarked that the close of the nineteenth century would see the emancipation of the uterus from the thralldom of the ovary. The two organs were entirely independent of each other. Steavenson's law had elucidated the physiology of the reproductive organs. Its parallel in the nervous system was the every-day occurrence of sleeping and waking, anæmia of the brain during sleep and congestion in the waking hours. The body and limbs were larger in the sleeping than in the waking hours, owing to the excess of blood derived from the brain. This wave process of twenty-four hours' duration was analogous to the menstrual wave, in which the duration of the cycle was twenty-eight days. The acme of its pressure was at the beginning of the menstrual flow, the trough of the wave shortly after the flow was over, then a long, low tracing for three weeks, increased at the beginning of the fourth to the point where the rupture of the vessels, with the menstrual flow, began. In addition to the menstrual wave, Steavenson had proved that there were associated a urea wave and a carbonic-acid wave, and that increased oxidation occurred a few days before menstruation came on, burning up the material in the mother's blood which was there for the nourishment of a fœtus. He had also shown the truth of the old saying that "the normal state of a woman was pregnancy." The excessive material was got rid of by oxidation when impregnation did not occur. Such was the meaning of menstruation. The active urea and carbonic-acid changes did not begin in the woman until the period of puberty, when a number of well-known and interesting phenomena were observed for the first time. The recurring phenomena of menstruation occurred only during the period when physical activity was at its best. When the childbearing period was over there was necessarily a conservation of the vital forces, for their resisting power had been diminished. The first positive mark of this was seen in the wearing out of the endometrium, an adenoid structure like Peyer's patches. In place of new tissue rapidly formed and changed, the endometrium was converted into old fibrous cicatricial tissue. The nervous-system activity now found its expression in the sudden flashes of heat and cold, instead of in the vascular system of the pelvis, in vertigo, headache, and biliousness, the particular form of disturbance manifesting itself in that organ or apparatus which was always most inclined to disturbance. In this way the various affections which were so prone to develop about the period of the menopause could be accounted for. Of these, diabetes of the menopause was a good example. The previous individual and family history of the woman would have much influence upon the way in which she would experience the menopause. In the artificial menopause the important object to be sought was the cutting of the nerves, which had much to do with the control of menstruation, if the pelvic organs were so diseased that their removal was necessary. The nerve center which presided over menstruation was probably a mixed one; its exact situation was not known. To destroy all the nerves of control, a considerable portion of the broad ligament must be removed.

(To be continued.)

Book Notices.

Vertebrate Embryology: a Text-book for Students and Practitioners. By A. Milnes Marshall, M. D., D. Sc., M. A., F. R. S., Professor in the Victoria University, etc. New York: G. P. Putnam's Sons. London: Smith, Elder, & Co., 1893. Pp. xxiii–640. [Price, $6.]

The chief aim of this work seems to be to enlighten the student of human embryology upon the analogies between the development of the lower vertebrates and that of man, and it is written in such a clear and interesting style that it must succeed in great measure in accomplishing this object. In an introductory chapter a general account is given of the development of animals and of the structure, maturation, fertilization, and segmentation of the ovum. Then in succession the process of development of amphioxus, the frog, the chick, the rabbit, and the human being is outlined. About two hundred pages are devoted to human embryology. From this portion of the work we quote the following paragraphs on ovulation and menstruation as showing the excellence of the author's method of dealing with the subject: "From the time of puberty, and throughout the whole of the childbearing period of life—*i. e.*, from about the fifteenth to about the forty-fifth year—the gradual maturation of the Graafian follicles, ending in rupture of the follicles and discharge of the ova, is continually going on; and in the healthy condition this discharge of ova occurs, not in an indefinite manner, but at regular and usually monthly intervals, one or more ova being set free at each period. This periodical maturation and discharge of ova is spoken of as ovulation. It goes on independently of sexual intercourse or of any kind of influence from the male, but it is possible that, as held by many authorities, the discharge of ova, though in no way dependent on sexual intercourse, may yet be hastened by this.

"Menstruation is the periodical discharge from the uterus of a certain amount of blood, mixed with mucus from the uterine glands and with epithelial and connective-tissue cells derived from disintegration of the mucous membrane of the uterus itself. There is a close connection between menstruation and ovulation. Both processes commence at puberty, and last throughout the childbearing period. They both recur periodically, and, further than this, the intervals are the same, and the two processes occur, as a rule, simultaneously."

"Menstruation, *i. e.*, the actual discharge from the uterus of blood and other matters, is not an isolated process, but is the terminal act of a series of changes which occur at regular intervals in the walls of the uterus and of which the sequence is as follows: In the quiescent condition the uterus is lined by a smooth mucous membrane of a soft, spongy consistence and pale-red color. It consists of a single layer of ciliated epithelial cells, resting on a very delicate basement membrane, beneath which is the connective-tissue layer of the mucous membrane. This latter is about 1·5 millimetre in thickness, and consists of connective tissue, with very numerous connective-tissue cells, and traversed by irregularly arranged muscle fibers. It is attached by its outer surface to the muscular wall of the uterus. The epithelium lining the uterus is pitted to form the uterine glands. These are tubular glands, imbedded in large numbers in the connective-tissue layer of the mucous membrane, vertically to the inner surface of the uterus; they are straight or slightly convoluted, their blind or outer ends are usually slightly dilated, and they secrete a transparent, glutinous, alkaline fluid.

"The changes in the mucous membrane accompanying menstruation commence with congestion and tumefaction of the mucous membrane lining the entire uterus. This swells up considerably, becoming softer and more vascular than before, and forming ridge-like folds which project into the cavity of the uterus. The connective-tissue cells increase considerably in number, and the uterine glands become longer, wider, and more convoluted. The whole layer of mucous membrane increases in thickness from 1·5 millimetre to from 3 to 5 millimetres, while the glands increase in diameter from 0 08 to 0·12 millimetre. This swollen and hypertrophied mucous membrane forms what is called the menstrual decidua.

"At the menstrual period the superficial layer of the mucous membrane, about a fourth of the entire thickness, breaks down and is thrown off, usually in detached fragments, but sometimes, in cases of dysmenorrhœa membranacea, as a single piece, forming a complete cast of the interior of the uterus. Fatty degeneration has been noticed in these cast-off cells, but only in the later stages, after the menstrual discharge has actually commenced.

"This disintegration and casting off involves the loss of the epithelial lining of the uterine cavity, of the mouths of the uterine glands, and also of about one fourth of the entire thickness of the swollen mucous membrane. It of necessity causes rupture of the blood-vessels of the detached portions, and so occasions more or less free hæmorrhage; and the blood so discharged, together with the broken-down mucous membrane of the uterus and with a certain amount of mucus from the uterine glands, forms the menstrual or catamenial flow."

"On the cessation of the menstrual flow, the uterine epithelium is very quickly generated, spreading over the surface from the necks of the uterine glands. It is completely reformed within three or four days at the end of the menstrual period. After this re-establishment of the uterine mucous membrane, the uterus remains in a quiescent condition for from ten days to a fortnight; at the end of this time it begins to swell again, and the menstrual process is repeated."

"The complete menstrual cycle, occupying in typical cases twenty-eight days, may be divided into four stages, which follow one another in regular sequence.

"The first or constructive stage is characterized by swelling of the mucous membrane, enlargement of the uterine glands, and increase in the connective-tissue cells of the mucous membrane; it results in the formation of a menstrual decidua lining the entire uterus.

"The second or destructive stage includes what is ordinarily known as the menstrual or catamenial period. It is marked by abundant discharge of mucus from the enlarged glands and by the disintegration and discharge from the uterus of the inner layer of the mucous membrane. It involves loss of the epithelial lining of the uterus and of the necks of the glands, and is accompanied by hæmorrhage.

"The stage of repair comes next, during which the uterus is recovering from the destructive changes. The uterine epithelium is restored by growth from the lips of the deeper parts of the uterine glands, and the swelling of the mucous membrane subsides.

"The fourth stage is the period of quiescence, during which the uterus, having regained its normal structure, remains without further change until the commencement of the next succeeding constructive stage.

"The actual and relative durations of the several stages enumerated above are not determined with certainty, and are subject to individual variations. It will, perhaps, be right to assign about a week to the constructive stage, rather less than a week (five days on an average) to the destructive stage, three or four days to the stage of repair, and twelve or fourteen days to the quiescent period, the four stages together occupying the twenty-eight days which make up the normal menstrual cycle."

"Concerning the first or constructive period, there is hardly any room for doubt that it is to be regarded as a preparation on the part of the uterus for the reception of an ovum. The several stages of the process correspond closely, in essential respects, with those that occur in the placental lobes of the rabbit's uterus from about the fourth to the eighth day. In the rabbit, as in the human uterus, there occur swelling of the mucous and submucous tissues, increased vascularity, a large increase in the number of the connective-tissue cells, and a great enlargement of the uterine glands, which become larger, wider, and more freely branched. These changes, in the rabbit's uterus, are clearly related to the nutrition of the embryo, for it is to this hypertrophied and modified area of the uterine mucous membrane that the embryo becomes attached on the eighth day, and it is from this area that the maternal part of the placenta is formed.

"The most important difference between the rabbit's and the human uterus, as regards these stages, is that in the rabbit the ovum, or rather the blastodermic vesicle, is present within the uterus during the whole of the series of changes, although it lies quite freely and does not acquire attachment until the eighth day, while in the human uterus, on the other hand, the menstrual constructive process goes on without the stimulus afforded by the presence of an ovum.

"As regards the actual changes in the uterus itself, the resemblance between the two cases is so great that it seems necessary to suppose that their significance is the same; and it must, therefore, be concluded that the human uterus periodically prepares itself, by the formation of a decidual lining, for the reception of an ovum, the process occurring at monthly intervals throughout the childbearing period, and quite irrespectively of the presence or arrival of a fertilized ovum.

"The second or destructive stage, constituting the act of menstruation in the ordinary sense of the term, is much more difficult to explain. At first sight it appears to consist simply in a rapid and somewhat violent undoing of the work accomplished in the preceding stage. If, however, it is compared with the changes that take place in the rabbit's uterus during gestation, it is found that the human uterus at the end of the constructive period of menstruation has reached a stage corresponding to that of a rabbit's uterus at the end of the seventh or beginning of the eighth day of pregnancy, when the blastodermic vesicle is still lying freely within the uterus, but is just about to acquire its attachment. In the rabbit this attachment is effected, early on the eighth day, by fusion of the wall of the blastodermic vesicle with the epithelium of the modified and hypertrophied placental lobes of the uterus. This fusion is immediately followed, or rather is accompanied, by degenerative changes in the uterine mucous membrane opposite the area of attachment, which rapidly leads to absorption of the uterine epithelium, and of the mouths and necks of the uterine glands.

"Similar changes occur during the formation of the human placenta, and, . . . inasmuch as the portion of the wall of the uterus which is concerned in the changes is the same in menstruation and in pregnancy, the menstrual discharge may be viewed, not merely as a destructive process, but as corresponding in a modified form to the rapid absorption of the same parts which occurs normally during pregnancy.

"The constructive stage of menstruation, and, as just seen, the destructive stage as well, may be regarded as phases in the preparation of the uterus for the formation of a placenta; stages which can be carried up to a certain point without needing the stimulus of the presence of an ovum or embryo, but which, having reached a point at which further development is impossible without an embryo, stop abruptly. The constructive stage has been shown to be an active preparation of the uterus for the reception of a fertilized ovum; the succeeding or destructive stage is not to be regarded as a simple undoing of this preparation, but as a further continuance, in a modified form, of the act of preparation, which leaves the uterus in a condition in which, for further elaboration to occur, the presence of an embryo is indispensable.

"Ovulation and menstruation, or the discharge of ova from the ovary and of the disintegrated decidua from the uterus, are processes which occur periodically and, as a rule, simultaneously; and it becomes a matter of interest to inquire into the nature of the connection between them. The ovaries swell up and become tender at monthly intervals. The enlargement commences, as a rule, a few days before the menstrual period, attains its maximum about the time of the period, and gradually subsides after the period is over. As the ovary is known to become congested just before the rupture of a Graafian follicle and the discharge of an ovum, it appears a fair inference that this discharge occurs about the same time as the menstrual flow—*i. e.*, that ovulation and menstruation are practically simultaneous. However, although this may be, and probably is, the rule, yet it is far from being an invariable one. Thus, Kölliker, on examining the ovaries of seven women who had died directly after menstruation, found that in two of the cases there was no fresh corpus luteum in either ovary—that is, no ovum had been discharged at the time of menstruating; and Coste had cited similar instances.

"Ovulation and menstruation may be assumed to occur, as a rule, about the same time, but it is by no means clear what is the precise nature of the connection between the two processes. Authorities differ as to the stage in the menstrual period at which ovulation occurs, tho majority holding that it takes place two or three days before the commencement of the period, while others maintain that it happens at the middle or even toward the end of the period. It is very possible that there is no constancy in this particular respect.

"A still more difficult point remains to be considered. The menstrual decidua is to be viewed as a preparation on the part of the uterus for the reception of an ovum; but it has still to be determined whether the decidua which is broken up and discharged at a given menstrual period is the one prepared for the ovum which is set free from the ovary at the same period, or for an ovum liberated at some previous or subsequent period. The question is one of great importance, as the means of determining the age of human embryos are very materially affected by the answer given to it.

"The menstrual cycle has been seen to consist essentially in a periodically recurring preparation of the uterus for the reception of an ovum. It is important to determine, if possible, at what particular phase of the cycle the uterus is in the condition most favorable for the reception of an ovum. Very different views have been expressed on this point, and two of these call for special notice: (1) That the end of the constructive period is the natural and most favorable moment for the ovum to enter the uterus. (2) That the period of quiescence is the most favorable time. In support of the former view it is urged that the formation of the decidua is unintelligible except on the supposition that it is a preparation for the reception of the ovum, and that the analogy of the rabbit's uterus, in which the sequence of changes is strikingly similar, is in favor of the end of the constructive period, or perhaps the commencement of the destructive period, being the one specially concerned with the fixation of the ovum to the wall of the uterus. It must be noticed, however, that, if the normal time of attachment to the uterus is, in the human ovum, the end of the constructive period —*i. e.*, the commencement of the menstrual period—then it is clear that the ovum which is to be attached can not be the one discharged from the ovary at the same period. For the discharge of the ovum is practically coincident with the onset of the menstrual period, and the ovum, after leaving the ovary, has still, in order to reach the uterus, to travel along the entire length of the Falloppian tube, a passage which is known to take three days in the rabbit and eight to ten days in the dog, and which in all probability takes at least a week in the human species. It follows that decidua which is discharged at a given menstrual period can not have been prepared for the ovum discharged at the same period, but must be the preparation for the ovum which was discharged at the preceding menstrual period.

"The second view, that the period of quiescence in the menstrual cycle is the most favorable time for the entrance of the ovum into the uterus, leads to the same conclusion, inasmuch as the only ovum which could reach the uterus during the quiescent stage is the one discharged at the previous menstrual period. In favor of this second view, that the quiescent period in the menstrual cycle is the most favorable time for the ovum to enter the uterus, the following considerations may be urged: (*a*) A much greater range of time is given within which the uterus is ready for the reception of an ovum. The quiescent period is the longest of the four stages which compose the menstrual cycle, lasting from twelve to fourteen days; while, on the other view, that the completion of the constructive process' marks the time at which the uterus is best fitted to receive an ovum, the range of time is limited to two or three days at most; and the longer period is more in accordance with what is known of the range of time within which conception may occur.

"(*b*) The stages in the formation of the menstrual decidua have been compared above with the changes which occur in the uterus of a rabbit from the fourth to the seventh or eighth day of pregnancy; and the close similarity between the two cases has been insisted on. It should now be noticed that these changes in the rabbit occur after the entrance of the ovum into the uterus—*i. e*, that in the rabbit the ovum enters the uterus while this latter is in the quiescent stage.

"Neither of the above arguments is at all conclusive, and the question is still an open one. It must be repeated, however, that, if either of these views is correct, the same conclusion follows with regard to the relation between ovulation and menstruation—viz., that the decidua of a particular menstrual period is related, not to the ovum discharged at that period, but to the ovum discharged at the preceding period. It follows that there is no necessary connection between ovulation and the occurrence of the menstrual flow, a point which helps to explain the cases quoted by Kölliker, Coste, and others, in which there was no discharge of ova at the time of menstruation. The fact that the two processes, ovulation and menstruation, occur normally at or about the same time, may perhaps be explained by the consideration that at the time of ovulation there is very considerable congestion of the ovaries and Falloppian tubes; and this, owing to the free communication between the ovarian and uterine arteries, must almost necessarily cause congestion of the uterus; and this determination of blood to the large and thin-walled vessels of the decidua is probably an important factor in causing the menstrual hæmorrhage."

These quotations are enough to show the character of the text, and we have only to add that the illustrations are exceptionally meritorious. The book should be studied by all who wish to obtain as clear an insight as possible into the present state of our knowledge of embryology. We would particularly recommend its study in connection with that of Dr. Minot's work on embryology, recently noticed by us.

The National Dispensatory. Containing the Natural History, Chemistry, Pharmacy, Actions, and Uses of Medicines, including those recognized in the Pharmacopœias of the United States, Great Britain, and Germany, with Numerous References to the French Codex. By ALFRED STILLÉ, M. D., LL. D., Professor Emeritus of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania; JOHN M. MAISCH, Phar. D., late Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy; CHARLES CASPARI, Jr., Ph. G., Professor of Theoretical and Practical Pharmacy in the Maryland College of Pharmacy; and HENRY C. C. MAISCH, Ph. G., Ph. D. Fifth Edition, enlarged and revised in accordance with the Seventh Decennial Revision of the United States Pharmacopœia. With Three Hundred and Twenty Illustrations. Philadelphia: Lea Brothers & Co., 1894. Pp. vi–1903. [Price, $7.25.]

IMMEDIATELY upon the appearance of the first edition of the *National Dispensatory* it took a place high in favor with both physicians and pharmacists. The reputation of the men who produced it, together with the intrinsic evidence it bore of their careful and intelligent labor in its production, caused it to take rank at once as among the foremost books of its class. The succeeding editions have sustained its title to such esteem. It is a subject of congratulation that the late Professor Maisch had practically finished his portion of this revision before he died. The work has been made to conform in every respect to the new *Pharmacopœia*, and the bulk of what is really valuable in the recent literature of new remedial agents is adequately set forth. The work will undoubtedly meet with great favor among medical men and pharmacists.

BOOKS, ETC., RECEIVED.

Lectures on Auto-intoxication in Disease, or Self-poisoning of the Individual. By Ch. Bouchard, Professor of Pathology and Therapeutics, etc., Paris. Translated, with a Preface by Thomas Oliver, M. A., M. D., F. R. C. P., Professor of Physiology, University of Durham, etc. Philadelphia: F. A. Davis & Co., 1894. Pp. xvi–302. [Price, $1.75.]

A Practical Treatise on Medical Diagnosis for Students and Physicians. By John H. Musser, M. D., Assistant Professor of Clinical Medicine in the University of Pennsylvania, etc. Illustrated with One Hundred and Sixty-two Woodcuts and Two Colored Plates. Philadelphia: Lea Brothers & Co., 1894. Pp. viii–17 to 881. [Price, $5.]

A Text-book of the Theory and Practice of Medicine. By American Teachers. Edited by William Pepper, M. D., Provost and Professor of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania. In Two Volumes. Illustrated. Vol. II. Philadelphia: W. B. Saunders, 1894. Pp. xii–1046.

Medical Jurisprudence and Forensic Medicine and Toxicology. By R. A. Witthaus, A. M., M. D., Professor of Chemistry, Physics, and Hygiene in the University of the City of New York, etc., and Tracy C. Becker, A. B., LL. B., Counselor at Law. With the collaboration of August Becker, Esq.; Charles A. Boston, Esq.; W. N. Bullard, M. D.; J. Clifton Edgar, M. D.; D. S. Lamb, M. D.; W. B. Outten, M. D.; Hon. William A. Poste; Edward S. Wood, M. D.; E. V. Stoddard, M. D.; Hon. Goodwin Brown; J. C. Cameron, M. D.; E. D. Fisher, M. D.; H. P. Loomis, M. D.; Roswell Park, M. D.; Irving C. Rosse, M. D.; F. P. Vandenbergh, M. D.; J. H. Woodward, M. D.; and George Woolsey, M. D. Volume One. New York: William Wood & Co., 1894. Pp. xxix–5 to 845.

Antiseptic Therapeutics. By Dr. E. L. Trouessart, Paris. Translated by E. P. Hurd, M. D. Vol. I. Pp. iv–129. Vol. II. Pp. v–316. Detroit: George S. Davis, 1893. [The *Physician's Leisure Library.*]

Ætiology of Pelvic Diseases in Women and their Prophylaxis. By X. O. Werder, M. D., Pittsburgh, Pa. [Reprinted from the *Pittsburgh Medical Review.*]

The Present Status of the Treatment of Uterine Fibroids. By X. O. Werder, M. D. [Reprinted from the *Annals of Gynæcology and Pædiatry.*]

Pregnancy following a Partial Suprapubic Hysterectomy, complicated by Hæmorrhage through the Abdominal Cicatrix. By X. O. Werder, M. D. [Reprinted from the *Transactions of the Association of American Obstetricians and Gynæcologists.*]

The Forms of Peritonitis, their Relation to Appendicitis, and the Ætiology of Each. By Roswell Park, M. D. [Reprinted from the *Medical Age.*]

Surgical Shock. By Charles P. Noble, M. D., Philadelphia. [Reprinted from the *Annals of Gynæcology and Pædiatry.*]

Report of Two Years' Work in Abdominal Surgery at the Kensington Hospital for Women, Philadelphia. By Charles P. Noble, M. D. [Reprinted from the *International Medical Magazine.*]

Pulpless Teeth and their Treatment. By Dr. George Evans. [Reprinted from the *Dental Cosmos.*]

A Human Embryo of the Second Week. By F. Mall, M. D., Baltimore. [Reprinted from the *Anatomischer Anzeiger.*]

Early Human Embryos and the Mode of their Preservation. By Franklin P. Mall, M. D. [Reprinted from the *Johns Hopkins Hospital Bulletin.*]

Observations on the Rotary-lateral Curvature of the Spine, with Special Reference to Ætiology and Treatment. By Jacob Teschner, M. D. [Reprinted from the *Medical Record.*]

Comparative Microscopical Studies of the Ovary. By Francis Foerster, M. D. [Reprinted from the *American Journal of Obstetrics.*]

Modern Homœopathy; its Absurdities and Inconsistencies. By William W. Browning, A. B., LL. B., M. D., Brooklyn. Philadelphia: William Fell & Co., 1894.

Four Cases of Brain Tumor, in Three of which Operation was done—Two Operative Recoveries—Ultimate Death in All. By W. W. Keen, M. D., Philadelphia. [Reprinted from the *American Journal of the Medical Sciences.*]

Enterorrhaphy; its History, Technique, and Present Status. By N. Senn, M. D. [Reprinted from the *Journal of the American Medical Association.*]

A Case of Suprapubic Cystotomy in which the Bladder was distended with Air instead of Water, and Four Hundred and Ninety-five Calculi removed. By W. W. Keen, M. D. [Reprinted from the *Journal of Surgery, Gynæcology, and Obstetrics.*]

Therapeutic Reflections. A Plea for Physiological Remedies. By Simon Baruch, M. D. [Reprinted from the *Journal of Balneology.*]

Report of a Case of Cerebral Tumor, diagnosed by Focal Symptoms, with Operation, Successful Removal of the Tumor, and Exhibition of the Specimen. By D. A. K. Steele, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Naso- or Retro pharyngeal Growths. By J. Ewing Mears, M. D. [Reprinted from the *Transactions of the American Surgical Association.*]

Primary Syphilis and Gonorrhœa in Children. By B. Merrill Ricketts, M. D., Cincinnati. [Reprinted from the *Journal of the American Medical Association.*]

Circular-saw Injury. By B. Merrill Ricketts, M. D. [Reprinted from the *Medical News.*]

Excision of the Hip Joint in Tubercular Disease. By B. Merrill Ricketts, M. D.

A Critical Review of the Seventh Decennial Revision of the Pharmacopœia of the United States of America. By George M. Beringer, A. M., Ph. G. [Reprinted from the *American Journal of Pharmacy.*]

Contribution à l'étude de l'emploi thérapeutique de l'extrait liquide de cerveau de mouton tant chez des adultes que chez des enfants. Par le Docteur Moncorvo. [Extrait du *Bulletin générale de thérapeutique.*]

Cleft of the Hard and Soft Palates. By J. Ewing Mears, M. D. (Read before the Philadelphia Academy of Surgery, November 6, 1893.)

Studier ofver Transitorisk Albuminiri hos till utseendet friska personer. Af Thorbjorn Hwass, Med. Dr. Docent, Stockholm. [*Bihang till Nord. Med. Ark.*]

Proceedings of the Philadelphia County Medical Society. Volume XIV. Session of 1893. Lewis Adler, Jr., M. D., Editor.

New York Eye and Ear Infirmary Reports. Vol. II. Part I. January, 1894.

Twenty-third Annual Report of the Middletown State Homœopathic Hospital at Middletown, N. Y., 1894. [No. 9.]

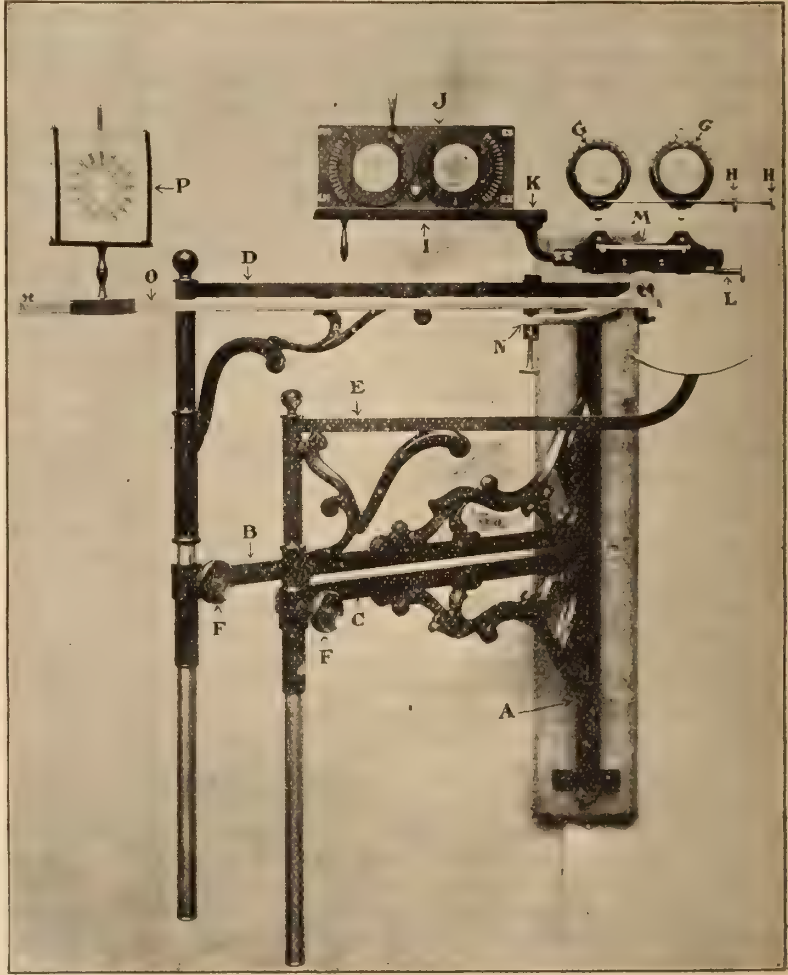
The Second Annual Report of the Sheppard Asylum. A Hospital for Mental Diseases. Baltimore, Md., 1894.

New Inventions, etc.

AN ADJUSTABLE BRACKET WITH TEST-LENS HOLDERS USED IN TESTING ANOMALIES OF REFRACTION AND THE VARIOUS FORMS OF HETEROPHORIA.

By J. Frederick Herbert, M. D.,
PHILADELPHIA.

A new and improved apparatus, recommended as a substitute for the heavy, cumbersome test frames now ordinarily used, is intended to be screwed to the wall, the window sill, or the back of a heavy chair.



All physicians who have had experience in using the test frames usually furnished with the test lenses know how much trouble it is at times to adjust the same on the patient's face; if one ear is higher than the other, then one side of the frame will be too high and the other too low, and very often the patient will complain of the weight upon the nose, especially if the examination is protracted, and each additional lens placed in the frame only increases the patient's discomfort, which sometimes really amounts to suffering.

Then, again, ophthalmological instruments on stands or tripods are not made rigid enough; there is too much vibration and much valuable time is spent in placing the same in the proper position in front of the patient, and they are also difficult to adjust. Having had these difficulties to contend with, it has been the writer's aim to devise an instrument to overcome some of the objectionable features met with in the instruments used in the daily routine practice of an oculist. The illustration of the instrument with a full description is placed before the profession for their kind consideration.

A is the vertical bar or upright from which extend the arms B and C, fitted into sockets at both extremities, permitting the instrument to be placed in any position, from that of being folded flat when not in use to that of the bars B and C being at right angles, and the carriers D and E parallel to the wall so that the patient can be seated comfortably behind it when in use.

B is the upper horizontal bar with bearings at the extreme end for receiving the upright, which contains lens holders, etc.

C is the lower horizontal bar similar to B for holding the chin rest. It will be noticed that the two bars B and C are separated throughout their entire length. This is one of the features of the instrument, and the idea is entirely original. This is done to prevent the upper bar from being thrown out of plumb by the weight of the patient's head after the instrument has been properly adjusted and fixed ready for use. It is quite evident that when the chin rest is attached to the same bar as the optical portion of the instrument, the results are vitiated, and we could not depend upon the accuracy of the tests. The two bars B and C are independent of one another, and no matter how much weight is placed on the lower bar, the upper one is not affected in the least, which fact can easily be verified by noticing the action, or rather inaction, of the spirit level.

D is the carrier to which are attached the lens holders, phorometer slide, and small bar with test card holder.

E is the adjustable chin rest fastened by the thumb screw F.

F F are the screws holding the parts rigidly in position when adjusted to the proper height.

G G are the lens holders, graduated from 0 to 180, similar to a test frame, each containing one revolving and three stationary cells. The outer cells revolve around the entire circle by means of an endless screw and toothed arrangement on the outer portion of the ring (as in the test frame suggested by Dr. Oliver); the three pairs of inner or stationary cells (not shown in the illustration) are also of the standard size for receiving test lenses, plane or rotary prisms, the Maddox rod, etc.

H are the thumb screws for revolving the movable cells, and can be easily handled by either physician or patient in determining the best position or axis when correcting astigmatism, or for placing either cylinders or prisms at any desired angle.

I is the slide or receptacle for the Stevens phorometer.

J is the Stevens phorometer for testing the various forms of heterophoria.

At K there is a hinge by which the slide with the phorometer can be swung into position directly in front of the lens holders (test frame) so that tests for muscular insufficiencies can be made both with and without the correcting lenses.

The thumb screw L adjusts the lens holders (trial frame) G G for interpupillary distances; the bar on which the holders slide is graduated in millimetres and can be used as a pupilometer.

M is the ground spirit level for truing up the instrument which, as can be seen in the illustration, is placed directly beneath the test-lens holders; this makes the adjustment quite simple and at the same time very accurate.

N is the screw and lever for adjusting or leveling up the lens holders G G.

The bar O, fifty centimetres long, graduated in the metric and inch systems, is brought into use when testing the near point; it is made on a hinge joint; when in position for use it extends directly outward midway between the lens holders, and when not in use it is placed out of the way, parallel with the horizontal arm of the carrier D, as shown in the illustration.

The carrier P slides freely forward and back the entire length of the bar O; it has two sets of clips for receiving cards, test types, and figures for testing the near point.

The instrument is well made in every detail, and is not only of scientific merit, but an ornament to any office, and will at once commend itself to those who appreciate and desire to do accurate work.

This instrument may be obtained from Queen & Co., 1010 Chestnut Street, Philadelphia.

1313 Arch Street.

Miscellany.

Injury by Golf-playing.—In the *Lancet* for February 10th Dr. A. Symons Eccles gives notes of two cases of gluteal strain in golf-players.

"The first case," he says, "was that of a man, fifty-two years of age, who came into my consulting room in February, 1893, presenting the usual appearance of a patient suffering from severe sciatica of the right limb—his mode of progression and the posture adopted in standing being at first sight identical with those most commonly acquired by persons afflicted with long-standing painful affections of the sciatic nerve. Supporting himself on two sticks with the trunk thrown over to the left side, the right knee was semiflexed and the heel raised, the toes only being in contact with the ground. He complained of severe pain over the greater part of the right buttock, which was greatly increased by any movement of the right limb, especially aggravated when the weight of the trunk was thrown upon it, as when the left limb was raised in the act of walking. While standing he was careful to throw the whole weight upon the unaffected limb, and could not be persuaded to relinquish the support afforded by the sticks or to attempt locomotion without their aid. On examination I failed to detect any tenderness over the sciatic notch or anywhere in the course of the nerve, nor was there any tenderness about the buttock, save on its upper and outer aspect. Between the anterior superior spine of the ilium and the upper margin of the great trochanter there were distinct tenderness on pressure and apparent swelling. There was also pain of a less severe character in the right lumbar region, which was increased when any attempt was made, whether passive or active, to induce the resumption of the erect posture. No tenderness, however, was elicited on pressure over the lumbar region. On measurement from the point of the second sacral vertebra round the respective buttocks to the median line in front, the swelling on the right side, which I had been at first inclined to regard as only apparent and merely due to posture, proved to be real, as on that side the measurement between the sacral spine and the middle line in front was fifty-three centimetres, the corresponding measurement round the left buttock being only forty-eight centimetres.

The measurements were made as the patient stood supporting his weight on the left limb, the right glutæi being completely relaxed, thus showing that the increased measurement was not due to the contraction of the anterior fibers of the glutæus maximus. On inquiry as to the cause and duration of the pain, the patient informed me that he had, within the previous ten days, commenced to learn the practice of golf, and though, during the first few days, going round the links once daily, he had experienced some general stiffness and soreness at night and in the morning on rising, no localized or severe pain had been felt until two days previously, when, having devoted the greater part of the afternoon to the practice of a stroke involving an attitude and a rapid muscular effort which I am at a loss to describe, but which are no doubt familiar to those who play golf, and desiring to pose in driving a 'tee'd ball' in the most finished style, he felt a violent pain in the upper and outer part of the buttock and over the right lumbar region, so that on leaving the ground he was unable to walk without much suffering and could not maintain the erect posture. At night the pain involved sleeplessness, and no sort of rest could be obtained save while lying on the left side with the back and right thigh propped with pillows. Hot fomentations and rubbing with embrocations had failed to give relief.

"The second case occurred in the person of a member of our own profession, who consulted my friend Mr. Keetley, to whom I am indebted for the opportunity of seeing this second example of the same accident, as he was sent to me for massage of the affected part. I first saw the patient early in April, 1893, when he told me that, as a beginner, on March 31st he was playing golf and went twice round the links, feeling very stiff at the end of the day, especially about the right hip, but not until the evening did he feel anything seriously amiss, when he began to suffer somewhat severe pain about the upper part of the right buttock and lumbar region. As time went on, he felt no better, and was unable to support the weight of the body on the right limb, the trunk being tilted to the left side and the left shoulder thrown forward, the patient presenting somewhat the appearance of lateral spinal curvature, due to faulty posture. The position adopted by this patient when standing and the mode of performing the act of walking were identical with those previously described in the first case. On examination I failed to detect any tenderness on pressure; the whole buttock appeared to be slightly swollen, but the muscles were kept carefully relaxed, any attempt to throw them into action causing pain, especially between the crest of the ilium in the axillary line and the great trochanter, the pain radiating forward toward the anterior superior spine and upward over the right erector spinæ. The measurements from the center of the sacrum to the median line in front over the buttock were—right, forty-nine centimetres; left, forty-seven centimetres. Firm massage of the buttock and loin was administered for fifteen minutes. On April 12th the measurements were—right, forty-eight centimetres; left, forty-seven centimetres. After two or three days' massage the severe pain subsided, though it was not until some days after this that the patient was able to assume the erect posture and to maintain it without painful effort.

"In the first case daily massage of the part for seven days completely restored the patient to the painless use of the affected limb, and after the first four days he was able to walk and maintain an almost erect position, both standing and walking; but the treatment was initiated within twelve hours of the appearance of the local deformity. In the second case, however, there was a lapse of ten days between the commencement of the pain and stiffness and the date on which the patient first saw Mr. Keetley and myself. Owing to the engagements of the patient, he was unable to attend for massage regularly, otherwise I believe that the pain, swelling, and deformity characteristic of this new accidental malady would have more readily been reduced. The lesion, if so it may be termed, which I venture to suggest existed in these two cases, somewhat akin in their nature and ætiology to tennis elbow, appears to me to consist of a strain and possible rupture of a few fibers of the anterior portion of the glutæi. It will be remembered that the anterior fibers of the glutæi are said to rotate the thigh inward, which is precisely the attitude vigorously adopted at first in making the 'driving stroke.' The aponeurosis of the erector spinæ is suddenly rendered tense when the trunk is rotated upon itself, as the 'driver' is forcibly thrown upward and then backward before being brought down to strike the ball, and it is not difficult to understand how, by the repetition of this exercise on the part of a neophyte, the glutæi may easily become overstrained, even when they are not suddenly called into action to maintain the equilibrium of the player, when, as I believe sometimes happens, in his earlier efforts he fails to strike the ball. It appears to be the habit of some professionals to keep the beginners under tuition constantly practicing certain strokes, not the least important of which, from a golf point of view, being the use of the 'driver,' which is not infrequently broken in the attempts made by neophytes to attitudinize on the model of old and distinguished players."

A Comparison between Chloroform and Ether as Anæsthetics.—At a recent meeting of the Berlin Medical Society, as reported in the *Mercredi médical* for February 14th, Dr. W. Koerte presented a comparative study of these two anæsthetics. In the course of his researches concerning accidents from the use of chloroform he had found one death in about three thousand cases of its administration. He called attention, moreover, to albuminuria or fatty degeneration of the kidney observed in animals after the prolonged use of chloroform in experiments. Etherization, which he had experimented with in many cases, appeared to him preferable, chiefly by reason of its not producing feebleness of the pulse. In addition, he had found that it hardly ever produced either vomiting or intestinal derangement, so that often on the very day of the operation the patient had been able to take solid food. The author thought that sleep was favored by the previous use of morphine hypodermically, and to that he attributed the fact that the awakening from ether anæsthesia was less disagreeable than that from chloroform anæsthesia. This impression he founded upon what he had been told by patients who had been subjected sometimes to the one and sometimes to the other. Some persons, however, described their sensations at the outset as being more disagreeable when ether was used; it produced a manifest irritation of the respiratory mucous membrane, and it was contraindicated in serious diseases of the respiratory apparatus. On the other hand, it exerted no injurious action upon the kidney or upon the heart. Although fatal accidents might be observed in the course of etherization, they seemed to be more easily avoided than those due to chloroform. In fourteen thousand cases of etherization, Gurlt had not witnessed a single fatal accident imputable to this method of anæsthetization. In administering ether Koerte uses Julliard's mask, with which the air breathed contains always less than five per cent. of ether, less than two per cent. of carbonic acid, and more than sixteen per cent. of oxygen. Anæsthesia is usually produced in about seven minutes, and for this purpose from an ounce to an ounce and a half of ether is required; it can be maintained after that with every appearance of natural sleep by means of a very small quantity of ether, so that generally the total amount consumed in an operation lasting half an hour is not more than three ounces. In the rare instances in which anæsthetization with ether is retarded the addition of about twenty drops of chloroform is sufficient.

Water in the Treatment of Scarlet Fever.—Dr. John H. Carslaw, of Glasgow, contributes an article entitled On the Severer Forms of Scarlet Fever, with Special Reference to Antipyretic Methods of Treatment to the February number of the *Glasgow Medical Journal.*

"With regard to the external use of *applications of cold and tepid water*," he says, "I hope to have shown:

"1. That in the large majority of cases they are not required.

"2. That even in simple cases and in anginous cases tepid spongings are useful in allaying restlessness and giving comfort—if the rash has not developed, the addition of mustard being an advantage.

"3. That mustard spongings are particularly useful during the earlier stages of an attack in which nervous phenomena are prominent.

"4. That for the hyperpyrexia of such (nervous) attacks, especially if the rash has developed, repeated cold wet packing is a convenient and efficacious method of treatment, general improvement often following its use.

"5. That local applications to the head may sometimes be of assistance.

"6. That in all cold applications there is need for the exercise of the greatest care."

Should Civilization Suppress Quackery?—The *Hospital*, an English journal, prints the following:

"Unlicensed medical practice either makes for the public good or it does not. By this standard it is to be tried; and by this standard it will, in the long run, either stand or fall. As medical men, we have no taste for 'kicking against the goads'; and as educators of public opinion we accept the challenge thrown down to us by a portion of the public, and we defend this general position: that only men of special education and training are competent to deal properly with bodily diseases. If this position can be successfully maintained, it follows in the strictest logic that only men of special education and training should be allowed by law to practice the medical art or any part of it. The mere penalizing of the unlicensed use of medical titles is a delusion and a snare.

"One might naturally suppose *a priori* that no intelligent person would think that a practitioner without special training could be as competent as a practitioner with special training. But in actual experience we find that a considerable percentage of the population put their trust in persons who have had no medical training. Now, we can not at any length argue this point here, for want of space, although we think it is well worth arguing. But let us put a single case which will illustrate the whole position. There are in Central Africa medicine men, rain-makers, witch doctors, and the like. Would any sane English man or woman think of putting himself under the care of such persons in a dangerous illness if an English doctor were at hand? Most assuredly not! But why not? The sole reason is that the African has no certain knowledge, and therefore no assured skill. The white doctor has knowledge, and therefore skill. It is the possession of proved knowledge and skill, and that alone, which makes the white doctor trustworthy as a doctor. It is the want of such proved knowledge and skill which makes the savage dangerous. But in this country a person who has had no medical education is necessarily as ignorant of medicine as the African witch doctor, and in many cases even more ignorant. An untrained man who practices medicine is likely to know much less of his art than an untrained man who practices law, and for this reason: the things connected with a knowledge of the law are to some extent a part of everybody's general education. But anatomy, pathology, chemistry, the medical art—none of these constitute any part of general education. So that for practical purposes any man who has had no special training for medicine is just as ignorant of the art and science which he essays to practice as if he had no education of any kind; just as ignorant, in short, as the Central African medicine man. This illustration may stand as a sample of the line of argument which should be addressed, not indeed to the intelligent public, but to that portion of the well-meaning public who, with the most peculiar mental perversity, insist that for life-saving purposes a lifeboat which has been specially built to float in storms is not so trustworthy as a washing tub would be, which is not a boat at all." . . .

"Now, if a business is such that its managers are afraid to expose it 'to the full light of day'; if, moreover, it is such that 'no honest man' can have anything to do with it, can it be for the interests of the public that such a business should be allowed to be carried on? Let it be remembered that these are the conclusions of a man who is not in a position to form a really competent opinion of the medical aspects and dangers of the business. They are the opinions of an educated man of fair mind on the broad and non-technical aspects of the case. In plain words, quackery, in its most favorable form, has been declared by this fair-minded magistrate to be a thing which will not bear exposure to the 'full light of day,' and a thing of which 'no honest man can approve.' If scientists and medical specialists, who alone can see the thing in its true and dangerous light, had been sitting in judgment upon the case, terms of condemnation very different from these would have been truthfully and properly employed.

"But if quackery in this favorable form be condemned by all right-minded men, what is to be said of it when practiced on the poor and ignorant by unscrupulous persons who have not merely no knowledge of medicine at all, but who are destitute of that general mental capacity and common sense which enable a man to minimize dangers and to practice the scoundrel's trade with a minimum of scoundrelism? There is only one thing to be said by men who recognize the logic of facts: Quackery ought to be stamped out. A quack medical practitioner is much more dangerous than a mad dog. The law encourages the suppression of mad dogs; it does not, as it now stands, encourage the suppression, but the increase of quacks.

"Now let us come to practice. If unlicensed medicine is to be stamped out, who is to lead the way in its suppression? The medical profession undoubtedly. It is mere folly to suppose that lawyers will initiate reforms in the laws which regulate medicine. We ourselves must do that. Loyalty to the State imposes upon us the obligation of uprooting and destroying everything which makes against the health of the state. If it be asked what class of medical men are to undertake this duty, the answer is that the General Medical Council is under the most absolute obligations to lead the way. That council takes no steps, however, and therefore the whole body of practitioners must organize ʌoluntary societies to effect such alterations in the law as the necessities of the case demand. Of course a certain amount of unpopularity will fall to the lot of any medical man or medical organization which takes up this line of action, and base motives will be imputed. But is a man or a profession to be deterred from plain duty by the fear of the imputation of unworthy motives? When political Liberals demand reform, somebody is always ready to assign base motives. When Unionists stand for the Union, somebody else sees the cloven hoof of base motives. But does any man, who is a man, hold his hand for that? The medical profession is very timid, and very ready to run away from shadows. That is a kind of cowardice entirely unworthy of educated men, and especially of Britons. The plain duty of doctors is to check and uproot all kinds of ignorant and unscrupulous medicine which endangers the public well-being, and that duty they must rise and do or confess themselves unfit to carry the status and name of Englishmen."

A Medical Building.—To meet the requirements of many members of the medical profession, it is proposed to erect an improved office building in the central part of the city. The plans have been designed with special reference to the needs of the tenants, who are to be exclusively members of the medical profession or engaged in occupations directly associated with medical practice, and no office will be rented to any tenant whose standing in the profession is not entirely satisfactory. The location will be convenient to the Grand Central Depot, the Fifth Avenue stages, the Third and Sixth Avenue elevated roads, the Madison Avenue and Sixth Avenue surface lines, and the Forty-second Street crosstown cars.

It will have every convenience and practical facility for the accommodation of tenants, such as telephones, a telegraph office, a district messenger service, an agency for trained nurses, mail chutes, pneumatic tubes, steam heat, electric light, electric motor power, etc.

The elevators will be especially large and smooth-running, and the access to each floor will be also had by means of easy stairs.

The best of janitor service will be furnished, and wheeled chairs will make it practicable for an invalid to be conveyed from a carriage to the elevator and thence to an office in any part of the building with greater facility than a lame or feeble person can now enter an office in an ordinary house.

The building will be thoroughly fireproof and will be finished in the most attractive manner. On each floor there will be separate retiring rooms for gentlemen and ladies. The ground floor will be occupied by stores, which it is believed will be very desirable for apothecaries, instrument-makers, opticians, etc. There will be hot and cold water in every office, and all special conveniences will be arranged to suit tenants renting space in advance. All wiring for electric motors, etc., will be done when the building is erected, so that subsequent expense for such improvements will be unnecessary. The rents will pay for janitor service, heating, and lighting, and will be very moderate in comparison with the rents now paid by physicians for ordinary offices, without the advantages of location, facilities, motor power, attendance, association, etc., which will be secured in the proposed building.

The facilities so difficult for specialists to obtain in flats, boarding-houses, and ordinary residences will be at hand in every office in the building.

Resection of the First Metacarpal Bone.—The *Lyon médical* for February 11th gives a summary of a Lyons thesis by M. P. Marlier, a pupil of the *École du service de santé militaire.* The author has been able to collect only three cases of this operation. One is attributed to Dr. Martin, of the Palatinate, in which there was a chondroma of the bone. In the two other cases, which occurred in Professor Poncet's clinic, the bone was resected by that surgeon on account of diffuse inflammatory lesions. The remote results of this operation have been studied by M. Marlier, who has been fortunate enough to fall in with M. Poncet's patients several years after the operation. The conclusions are as follows: When it is judged necessary on account of the gravity of existing lesions, extirpation of the first metacarpal bone is a good operation from the functional point of view. The general appearance of the hand is not very much changed. Of course the thumb, being carried back to the carpus, is just so much shortened, but it maintains its habitual usefulness in prehension, and for any manual work that does not require the employment of great force it is as serviceable as an ordinary thumb. If the tendons have been managed carefully, it preserves all its movements, but they are limited, at least apparently, and diminished in power. It has been observed that the force with which the thumb can be made to oppose the fingers is two thirds of that of a sound thumb. Whatever the patient's age may be, regeneration of the metacarpal bone can not be counted upon. The base of the phalanx comes into immediate contact with the trapezium, or is separated from it only by a few fibrous shreds. Although this failure of regeneration is to be regretted from an æsthetic point of view, it does not appear to compromise the functions of the digit. Since removal of the first metacarpal bone gives ultimate results so perfect, it may be assumed that simultaneous resection of this bone and of more or less of the neighboring bones is preferable to amputation. In one of M. Poncet's cases, believed to be unique, one of extirpation of the first metacarpal bone and the first phalanx, a rapid cure occurred in spite of the patient's comparatively advanced age. According to the accounts received, the digit maintains its utility. The same is true of a case of complete removal of the bones of the thumb reported by the author. The case was one of simultaneous removal of the first metacarpal bone and of the two phalanges of the thumb, in a young man, for acute infectious osteomyelitis with detachment of the epiphyseal periosteum.

The Antiseptic Treatment of Burns.—In the *Centralblatt für Chirurgie* for February 17th we find ana bstract of a Paris thesis on this subject by Madame (or Mademoiselle) Nageotte. After a very interesting historical introduction concerning the methods formerly employed in the treatment of burns the authoress states that the best results possible are attained by maintaining an aseptic condition of the wound. She says that, especially in very painful burns, it is best to employ general anæsthesia, in order that the application of the antiseptic process may not be interfered with. After the wound has been rendered aseptic she endeavors, wherever it is possible, to procure its healing under a dry dressing, whether the burn is of the first, the second, or the third degree, and uses as disinfectant agents iodoform, thiol, ichthyol, and particularly bismuth subnitrate as recommended by von Bardeleben. She adds histories of forty-five cases.

Mercurial Ointment in the Treatment of Erysipelas.—In the *Medical Reporter*, of Calcutta, Dr. A. S. Sandel says that he has recently employed mercurial ointment in a case of erysipelas with extensive sloughing of the integuments of the chest and abdomen, after free incision and the usual constitutional treatment had proved insufficient to arrest the progress of the disease. Its use in this case was attended with such decided advantage that he determined to give it another trial as soon as a favorable opportunity occurred. Within three weeks a similar case came under his observation. The patient was an Ooriah and rather aged, but he recovered under the treatment. The ointment was spread on fine linen, and with that the whole of the inflamed surface was kept covered. It was not applied on the open sores.

Bilateral Congenital Absence of the Radius.—At a recent meeting of the Leipsic Obstetrical Society, according to the *Centralblatt für Gynäkologie*, Dr. Krönig showed a new-born child which was the subject of this defect of development, and remarked that in all literature there were only forty-five cases of entire absence of the radius recorded, and in only twenty-one of these was the defect bilateral.

Lectures and Addresses.

MODERN EXPERIMENTAL MEDICINE.

ANNIVERSARY DISCOURSE,
NEW YORK ACADEMY OF MEDICINE,
November 29, 1893.

By WILLIAM H. THOMSON, M. D., LL. D.,
PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS
AND OF DISEASES OF THE NERVOUS SYSTEM,
UNIVERSITY OF THE CITY OF NEW YORK.

(*Concluded from page 294.*)

There is still another wide field in medicine which falls to the chemist. The living body is constantly generating poisons of its own as it lives. To remove these is the business of the excreting glands. But it is now known that certain great organs have the conservative function of destroying or neutralizing some of these self-generated poisons. Thus it is maintained that poisons are generated every day of our lives in natural digestion in the intestine which, if they were not properly dealt with by the liver and other organs, would quickly kill us, chiefly by their poisonous action on the nervous system. We seem to have here a promising clew to the origin of many neuralgic, convulsive, or paralytic functional disorders, and therefore to indications for their treatment, to determine which we are to look to the progress of chemical discovery.

Such being the different lines on which modern experimental medicine is pushing its investigations, the outlook for material gains in the next twenty-five years is fully justified by the splendid showing of special equipment for the purpose which the whole field of medicine now presents. Thus Italy, long ago the mother of medical schools for Europe, has recently, and almost suddenly, come to the very front again in her contributions to experimental medicine. One of the services of the young Italian school of investigators has been the following up of the great discovery of the French surgeon, Laveran, in Algiers, of the blood parasite which causes the ague disease or malaria. They have good opportunities in Italy for such a study, and the work of Marchiafava, Celli, Camillo Golgi, and others in this field is fully confirmed by Sternberg, Councilman, and Osler in this country, by Professor Vandyke Carter and Professor Evans in India, and lately by the important work of Dr. P. Hehir, lecturer on pathology in the Nizam's medical school, Hyderabad, India. Here in our New York hospitals we are also equally confirming the connection of ague with these blood parasites, the microscope thus aiding both our diagnosis and treatment.

The chief interest, however, of Laveran's discovery is not only in demonstrating the nature of one of the chiefest causes of what we call unhealthy places, countries, or climates, but that a new world is thus opened to us in the microscopic kingdom of life itself. For the malarial organism is not a bacterium or vegetable parasite, but in its nature is an animal organism, or amœboid protozoon, as it is called. If that be so, it can scarcely be the only one of its kind. In fact, the discovery of disease-producing microscopic amœbæ is multiplying fast. Thus a peculiarly intractable and fatal form of dysentery is now demonstrated to be caused by a special amœba. But one of the most curious developments of the kind has been demonstrated in our own country as the cause of the Texas cattle plague. We may remark that the infectious diseases of animals are rightly regarded of as much significance as those of our own species. Thus the humble rabbit is now the object of the greatest interest and study to investigators in Naples, Berlin, Jena, Paris, Dorpat, London, and Glasgow, because it is infested by a very minute parasite, evidently not a bacterium, in the living cells of its liver ducts, and all this interest in the rabbit is because we may thus find out what cancer is. Now, in the case of the Texas cattle fever it is now demonstrated beyond question that it is caused by a protozooid parasite which enters and destroys the red blood-corpuscles of the cattle, reducing them from seven million to the cubic millimetre to two million, and in the same manner that Laveran's protozoon enters our red blood-corpuscles. But the further extraordinary fact has been demonstrated that the Texas protozoon gains entrance to the bodies of the cattle by means of a Texas species of cattle tick, for ticks which infest cattle in our Northern States never produce this fever. This death-dealing cattle protozoon, therefore, must live first on ticks as its host, and from the ticks pass to the larger animal. Now, Livingstone first made the world acquainted with the formidable tsetse fly, whose bite destroys all bovine animals in certain localities in Africa by a slow wasting fever like the Texas cattle fever, and the mystery of its action—namely, that one such insignificant fly can kill an ox—may perhaps be found to be due to a similar infection to that of a Texas tick.

Thus this subject of animal protozoa is looming up in proportions which make us feel like the English naturalist Bates, when he had been working for eleven years in the vast Amazon forests, that the field seems to have neither beginning nor end. In fact, it seems to begin in our own blood in the case of our vast host of white corpuscles, which act very much like independent amœbæ or animals within us, whose business it is to eat up whatever should be eaten because it is growing old, or because it has no business to be there. Hence they are called phagocytes or eating cells, and Dr. Hehir thus describes how he watched a white corpuscle catch an actively moving malarial parasite: The phagocyte first advanced toward its victim, and then for about ten seconds appeared inactive, barely touching its prey, and almost suggesting that it came to make friends with the unwary parasite, reminding one of the spider and the fly. That portion of the parasite in contact with the white corpuscle was apparently stationary, while the rest of it was making lively efforts to set itself free, but gradually its movements became imperceptible. The phagocyte continued to entangle its prey, until within the space of a minute it completely incorporated the amœboid parasite within its protoplasmic web, whence there was no exit. (*Lancet*, May 28, 1892.)

But to return to the Italian school of experimenters, who are largely disciples of instructors from beyond the Alps, such as the veterans Hugo Schiff, of Florence, and Moleschott, of Rome. Following up the discovery of the tetanus bacillus by Nicolaier in 1884 in Professor Flügge's laboratory at Göttengen, but which was first isolated in a pure culture by the celebrated Japanese bacteriologist Kitasato in 1889, the Italian investigators, Tizzoni and Cattani, developing Kitasato's suggestion, have succeeded in isolating an antitoxine to lockjaw from the blood of rabbits, which has been successful (in 1892) in eleven cases of severe tetanus in men, and with such promptness that no doubt of the curative efficacy of this remedy can be further entertained.

Crossing the Alps to the great medical center of Vienna, we have a striking example of the advantages of associated medical investigation carried on in the same building. In the Vienna Pathological Institute we have first the chemical laboratory under Ernst Ludwig, to which is committed by the Imperial Board of Health all questions about the pollution of drinking water and like public questions. Then the famous pathological laboratory founded by Rokitansky, and the laboratory for experimental pathology under the superintendence of the veteran Stricker, while in another building is the physiological laboratory of Professor Exner, well known for his work on cerebral localization, and the bacteriological laboratory under Weichselbaum, whose name is associated with the bacteriology of pneumonia. All these departments, liberally furnished by the Imperial Government with funds for the prosecution of original experimental research, cooperate together, each referring to the other any questions which may arise that call for a special report from its proper laboratory. In fact, Germany is the richest country in the world in laboratories of experimental medicine, with the result that she surpasses all other countries in her contributions to medical knowledge. Of the spirit of cooperation in this work and of its singular extent we need only cite, for illustration, the fact that the list of editors of the *Archiv für experimentelle Pathologie und Pharmakologie* contains the names of two professors of Leipsic, one in Munich, three in Giessen, one in Halle, two in Prague, four in Königsberg, one in Zurich, two in Marburg, two in Berlin, one in Göttingen, one in Erlangen, one in Berne, one in Kiel, one in Greifswald, one in Dorpat, one in Frankfort, and three in Strassburg.

Such a list, however, only represents a fraction of the number of zealous experimental investigators in a country abounding with every kind of laboratory for every kind of medical research. There is, however, one aspect of this subject which we must very briefly refer to, suggested by an appeal which I have received and which I suppose that others present may have likewise, from a society in London, apparently looking toward the formation of an international association for the suppression of all medical experimental laboratories, on the ground that they are little else than revolting establishments for cruelty to dumb animals. Now, it does not do to treat this serious subject with levity. It is no adequate answer merely to say, what is nevertheless the truth, that more animal suffering occurs daily at our slaughterhouses from which both vivisectionists and antivivisectionists get the meat for their tables, or to insinuate that the collation after the adjournment of an antivivisection society testifies to more barbarity in its lobster salad than ever happens in Koch's whole building, because the unhappy crustaceans therefor were carried alive from their cool marine beds to be soused alive in boiling water. The real question is, What is cruelty? If simply killing animals is cruelty, then every hunter for the sport of the thing is a monster thereof, and buying butcher meat is patronizing and sharing in cruelty. All Nature, then, is Satan's kingdom from the beginning, and no one else's. The line should be drawn just here. Inflicting suffering *per se* is not cruelty; only unnecessary suffering so inflicted is. This principle is impregnable, for no one can live in this world without inflicting suffering, and none but hypocrites can deny that statement about themselves. The question, then, is not that of inflicting suffering, but for what purpose is it inflicted? That being so, we can strongly affirm that the intent of scientific men in experimenting on animals is so much the reverse of cruel that they may be trusted to devise the lessening of suffering in their work much more than ordinary butchers do in theirs, and as we allow these latter to kill in order that we may eat, we may let the men continue to work for the lessening of human sorrow and death, who already by that work have reduced, for example, the puerperal-fever mortality in the Vienna maternity from twenty-eight per cent. to one third of one per cent., who are saving now fully fifty thousand lives yearly in the field of surgery, and who bid fair to rid the world of all its epidemics as well as many of its hitherto greatest causes of suffering and death.

In illustration of this particular subject, and of our whole subject, we may give a short account of what a complete experimental medical institution is, as shown by the newly opened Koch Institute for Infectious Diseases in Berlin. Next to the new Infectious Diseases Hospital buildings, which have every arrangement for the isolation, treatment, and sanitation of the sick, is the Scientific Division building, a triangular structure, well lighted on all three sides. On the cellar floor on one side are the receptacles for the fodder or food for the stock of animals and the quarters for the animals themselves, whose cages are warmed by Kauffer's mantel ventilating heaters, which in winter force in a constant supply of fresh air. The rest of the space of this floor is used for an electro-motor, a water-distilling apparatus, a workshop, and for some of the heavier chemical apparatus. On the next floor are the rooms of the inspector and the assistant physicians who attend to the observations on the animals on whom experiments are being made, those already inoculated, etc., which are there in the compartments assigned to them, each cage having a card with the manner and time of treatment of its occupant. The next floor is used for bacteriological studies; at the apex of the triangle are the workrooms of Robert Koch, then those of his assistants. These rooms are all furnished alike with a work-table and its appurtenances at its center, while at the large windows are the tables for working with the microscope, with every contrivance for lighting the microscope stage, with a digester, chemical reagents, and tools within reach. In each room there is a gas stove with its incubator for bacteria, having a thermometer so connected with electric wires at the two points of desired maximum and minimum temperatures that a bell is rung automatically whenever either heat point is reached. On this floor is the large incubating room, made on the model of that in Pasteur's Institute, being a room within an ordinary room, lit by electric light, and whose ceilings, walls, and floors are of different non-conducting layers of wood, brick, and clay, and the whole interior lined with lead to keep the heat confined. The entrance to the room is by means of a double set of doors so arranged that the outer door must be closed and locked before the second door can be opened at all. On the walls are the leaden brackets for holding the cultures of bacteria. The heating of this room by hot-water pipes is automatically regulated by electric wires and bells so that the temperature never goes below 37° C. or above 40° C. On the next floor is the chemical laboratory, with rooms for the chief of that department and of his assistants, with all their requisites for work. Also the department for microphotography, with its full apparatus, the dark room of this laboratory having its floor cemented and varnished for further insuring against the defilement of dust. Lastly, on the next floor comes the library, that most indispensable adjunct of experimental medicine in these days of incessant publication of researches from Japan to America, and where we may be sure there are no dusty volumes.

If the ancient Greeks, among their gods for every quality, had a god for accuracy, they certainly would have erected his image over the portal of such a temple as this. Everything here is devised under the inspiration of that quality. The attending priests have to go through ablutions and washings of utensils which would have worn out the most scrupulous observer of the rules in Leviticus. It is curious, indeed, to read in the old Mosaic injunctions that leprosy might so infect the walls and plastering of a house that the priests had the right to condemn it and order the house to be taken down (Leviticus, xiv, 33–49). The modern discovery, therefore, that the bacillus of leprosy closely resembles the bacillus of tuberculosis might be commended to some modern critics as another proof that the old Egyptian priest Moses could not have written the Pentateuch, but that it is a very recent book indeed.

Time forbids us to more than mention that great center of experimental medicine, the University of Dorpat, in the German Baltic provinces of Russia. For years the reports of its physiological laboratory under A. Schmidt and of its chemical laboratory under the veteran Dragendorf have been widely known in the world of medicine; and of their younger colleagues, Professor Thoma stands in the front rank of bacteriologists, while the recently published work of Professor Kobert on the action of drugs as interpreted by experiments is generally received as the most authoritative work in its department.* In St. Petersburg itself the new Imperial Institute of Experimental Medicine, erected by the government and by the munificence of Prince Alexander Petrovich, who is its curator, is the largest establishment of the kind in the world. It includes no less than eight large buildings, and nothing has been spared to make it equal to Koch's Institute in Berlin and the Pasteur Institute in Paris. With the efforts made to fill its chairs with the most eminent professors who can be secured, there can be little doubt that it will soon be another of the great centers of scientific activity. In Sweden the ancient University of Upsala is known to all physiological chemists by the work of Professor O. Hammersten. In Norway Professor Lochman's laboratory at the University of Christiania is one of the resorts of English workers in original research, who till recently were denied such opportunities for prosecuting these investigations in their own country.

France is second only to Germany in the field of experimental medicine. Thus the English student of bacteriology has to learn the two languages, French and German, if he is to keep up with the subject at all. It is to France, indeed, that we owe the real beginning of our knowledge of the true relations of the invisible earthly world of life. Never in the history of human knowledge has it been given to one man to make a greater addition to it than that contributed by Pasteur. One can not help feeling a glow in reading the words addressed to him on his salutatory which describe how, beginning with his researches on fermentation with the lactic-acid-making yeast, he went on to the agents which produce putrefaction of animal substances, which he showed was a strictly analogous process with fermentation, till he came to this memorable conclusion: that "whenever and wherever there is decomposition of organic matter, whether it be the case of an herb or an oak, of a worm or a whale, the work is exclusively done by infinitely small organisms. They are almost the only agents of universal hygiene, as they quickly clear away the remains of all that has had life. They protect the living against the dead. They do more. If there are still living beings, if since the hundreds of centuries the world has been inhabited life continues, it is to them we owe it."

It is the Pasteur Institute in Paris that has been the model for all other institutions of experimental medicine not only in France, but also in all the world. The impulse to prosecute experimental researches has extended to every large hospital and medical school in the country, and the published researches of Gamaleia, Telamon, Roux, Yersin, Chauveau, Koga, Bouchard, Gautier, with the naturalized biologists, Metschnikoff and Soudakewitch, and a host of others in every department, show how well France maintains her old place and rank in the world of practical science.

The profession in Great Britain has been long fettered by legislation hostile to all forms of experimental medicine which involved experiments on animals. It is a curious chapter in history, with many of the features of a religious crusade. But now that the British public is learning better what sort of beings physicians are and what their aims are —namely, to spoil their own business as much as possible by *preventing* disease—English investigators are no longer obliged to go to foreign countries, but can work at home in London at the Conjoint Research Laboratories of the Royal College of Physicians and the College of Surgeons, at the bacteriological laboratory of the College of State Medicine, and at the Brown Institution, where experimental physiology and pathology are carried on. Besides these, there are physiological and pathological laboratories at University College, King's College, Guy's, St. Thomas's, St. Mary's, and Charing Cross Hospitals. At Cambridge there are the physiological and pathological laboratories of the university, and also at Owens College, Manchester; at Oxford, a physiological laboratory only. The University of Edinburgh is well supplied with laboratories in physiology, pathology, bacteriology, and sanitary science, and the Royal College of Physicians of Edinburgh has established its research laboratory. In Ireland, Queen's College, Belfast, has both physiological and pathological laboratories. This new movement and the former impetus from the continental schools have already borne good fruition. We may simply mention in illustration Gaskell's researches on the contracting, expanding, and conserving rôle of accelerating and of inhibiting nerves; McKendrick's on the gases of the blood; Macalister on the physiology of heat production; William Hunter on pernicious anæmia and on the physiology of the destruction of blood corpuscles; Sidney Martin on the blood poisons of diphtheria; and the important contributions to the physiology of the nervous system by Ferrier, Horsley, Beevor, Schaeffer, and others. The younger school of British bacteriologists is also rapidly assuming its proper status, as was shown in the important debates last year at the London Pathological Society and at the British Association on the subject of immunity. Lastly, to the illustrious Sir Joseph Lister the whole world is indebted for his early appreciation of the bearing of the immortal discoveries of Pasteur on surgery, and his triumphant demonstration of their practical application in the new surgery which will ever make the nineteenth century memorable in the annals of medicine.

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* To the abiding disgrace of Russia, this great university has been suppressed this year because it was German.

In the field of experimental medicine our own America has shown hitherto that she is a new country in more than one sense. It would seem to be the fashion with many to praise whatever is new and depreciate whatever is old on principle. But we might as well prefer new wine to old as to welcome perfect newness in education, literature, or science. There was much that was crude enough in the medical education of the United States of twenty-five years ago. To get an adequate medical training, the tide of emigration had to be reversed and Americans had to go East. A better era, however, is now fairly begun. We have three laboratories in this city alone in which medical research is and can be carried on in either one of them with much better facilities than could be found in all America twenty years ago. But the laboratories of the College of Physicians and Surgeons, the Loomis Laboratory of the University, and the Carnegie Laboratory of the Bellevue Hospital College are things of yesterday, and yet already the work of members of this academy therefrom is now quoted and appealed to in the literature of the world's scientific brotherhood, a rare occurrence in former times. Meantime Johns Hopkins University has attained a foremost rank among the institutions of the world for original research, while the laboratories of Harvard, Yale, and Pennsylvania Universities, and of the University of Michigan, are each new centers of medical investigation, which bid fair to represent our country as she should be represented in the field of modern science. Our medical colleges, however, have been at a great disadvantage in comparison with similar European institutions, in that they have been so largely private institutions, with no support or recognition from the Government or even from the general public; and when they have been associated in name with academic colleges, the connection has often been anything but integral or organic, more as if they corresponded to an appendix vermiformis, which might easily be cut off without being either missed or regretted. It has been therefore mainly by private munificence, but lately given in any case, that America has been able to take a position in experimental medicine at all, and yet we can already point to such names as Welch, Councilman, Sternberg, Prudden, Byron, Wood, Chittenden, Vaughan, and others as men for us to be proud of.

Rather unexpectedly to some, the municipal government of the city of New York is to be credited with one good thing, and that not a small one. I bespeak here the full appreciation and co-operation of the academy and of the profession of our city in the work of the health board, under the supervision of Dr. H. M. Biggs, for the early diagnosis of diphtheria by bacteriological methods, for which he has devised a simple and effective system, which enables any practitioner to send an inoculation of his own from the throat of a suspected case to the health board bacteriological laboratory, and to have the diagnosis settled within twelve hours. The practical value of this system is great, for every physician knows that we ought to have no doubt about a throat exudation in any case, for true diphtheria is always dangerous, not to the patient alone, but to everybody, and yet in many instances only a bacterial cultivation will give certainty to the diagnosis. Moreover, diphtheria does not always disappear with the membrane, for enough of it may remain to both inoculate a culture plate and to infect others, when only nasopharyngeal mucus is present to inspection, and such children may be allowed to play with others or go to school, with the most fatal results. Dr. Biggs has charts which by the graphic method conclusively demonstrate how single cases of diphtheria have started neighborhood epidemics in our city, just as a fire caught in a room spreads first to other rooms and then to surrounding houses; and this valuable work should lead to dealing with this fell disease by resorting to the same measures for removing and isolating the sick, till all its germs are known to be gone, that the community now allows to be done by law with small-pox.

In conclusion, we protest against a word of what we have said about experimental medicine being construed as depreciating either clinical medicine or pathological anatomy. Showing the fine fruit on one branch of a tree certainly detracts nothing from the excellence of the fruit on the other branches. More than that, experimental medicine never can be a *substitute* for clinical medicine. We might as well fancy that microscopes are going to be so wonderfully improved that they will not need eyes to see through them. Experimental medicine is but a new handmaid to clinical medicine, coming now just at the right time to aid us at the bedside toward clearer diagnosis, clearer appreciation of conditions, clearer prognosis, and last, but not least, to less empirical and to more scientific treatment.

Secondly, it is time that the general public should appreciate how universally beneficial all progress in medicine is to the rich and to the poor alike. Medical science knows absolutely no distinctions of circumstance, age, sex, culture, or brain. All fall sick together, and all have the same claim to be kept from falling sick, or to be helped if they do. Is it too much then to hope that in the coming century a small fraction—for that is all that we would think of asking—of the public money now spent on ironclads, for example, with apparently the result of showing how well they can sink, will be given to our workers, to enable them to rid the world, say, of malaria? Why, even real estate men might subscribe toward such an object, as a mere matter of land speculation. Seriously, our generous donors, following the example of that practically minded man, William H. Vanderbilt, should consider whether they can not as wisely contribute of their wealth to institutions which will fit men to make accidents to limb and body less formidable, or who will smite pestilence by day or by night, or who will lessen bodily suffering in too many ways to recount, as to go on endowing colleges for undergraduate boys.

Lastly, I take my leave with many apologies for such a long discourse, by saying that this review emphasizes how truly international the brotherhood of medicine is. Fancy an attempt nowadays to have the law-makers of the world co-operating together, legislators in England comparing notes with the councilors of the Czar, and receiving suggestions from each other! But harder yet is it to conceive of co-operation between Rome, St. Petersburg, Tokio, Edinburgh, Boston, and all other places between, in questions religious! But in medicine we do not even know about one school of doctrine or another. From the nature of the case, ours is a worldwide, zealous partnership, all working together on equal terms for one end, and inevitably that end will come to pass in a world made by medical men much the happier, because much the healthier.

DIPHTHERIA.*

By JOHN A. LARRABEE, M. D.,
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It would require a great deal of time to enumerate the remedies which have been proposed and advocated for diphtheria. Suffice it to say that nearly every drug in the materia medica has been employed, and to each has been accorded a degree of success backed by the enthusiasm of the author. I shall only attempt at this time to mention such agents as have, in my hands, proved worthy of further trial and are entitled to your consideration.

As I have often told you, when speaking of the eruptive diseases, there are cases occurring every now and then in which no treatment is of any avail, in which all remedies fail, and which go on to certain and rapid death, in spite of the most approved methods. A large allowance must therefore be made for the character of the epidemic in summing up our successes. In other words, you will sooner or later discover that there is such a thing as diphtheria and diphtheria.

The treatment of diphtheria should, in view of its pathology, be both local and constitutional, and both should be commenced at the start and pushed vigorously to the end.

And just here I am tempted to give you some rules which have become axioms with me:

1. The local manifestations are not always in proportion to the gravity of the disease. Often a comparatively slight extent of membrane is followed by the most profound toxæmia, and on the other hand very extensive pultaceous, oyster-like sloughs produce little or no constitutional disturbance.

2. Anæmia, albuminuria, and enlargement of the cervical and parotid glands are to be considered, as marking the extent of the systemic involvement and as precipitating cardiac failure.

Cœteris paribus, the danger of blood poisoning and laryngeal complication is in proportion to the continuance of the local manifestations. For this reason it is of prime importance that the false membrane and infecting slough should be removed by agents which are harmless to the sound tissue. The latter is an important consideration, as there are very many chemicals which will remove the false membrane but which are also capable of doing violence to the healthy mucous membrane. Patients who are old enough to properly use a gargle will be greatly benefited by the peroxide of hydrogen properly diluted and alkalinized. Much of the discredit into which this wonderful and powerful agent has fallen is due, in my judgment, to its improper use. In infants and young children all attempts to dislodge the false membrane by gargles, sprays, and mops will prove futile, and the enforcement of such a plan soon becomes cruelty. The introduction of the wonderful vegetable ferment known as "papoid" by the enterprising pharmacists Johnson & Johnson has proved to be a great blessing. It has certainly done yeoman's service in my practice. Indeed, I may say that it leaves little more to be desired in the local treatment of diphtheria. To be effectual it must be used by *insufflation*, which plan is the most acceptable as well as the most effectual in children. A fine and almost impalpable powder should be made by triturating "one part of papoid with two parts of boric acid or bicarbonate of sodium."

This powder is placed in the chamber of an "insufflator," the tongue is then depressed by a spoon handle and the bulb of the insufflator is suddenly compressed and the powder is thickly deposited over the tonsils and fauces, every part being reached. This operation should be repeated at intervals of an hour until the membrane becomes pultaceous and is easily expectorated. Fluids should not be allowed for a few moments afterward. By cutting a hole in a rubber ball and inserting a glass tube or cylinder of elder wood, an insufflator may be improvised in any farmhouse in the country. The crying and resistance of the child only serves to better expose the pharynx and make the distribution more thorough. Of course, some of the powder will be swallowed, which is no disadvantage and may possibly assist in the digestion of food which is impaired by high temperature. Internal treatment should be directed from the very inception of the disease to the preservation of the integrity of the blood corpuscles and the elimination of the poison. For this purpose no better treatment will ever be proposed than the administration of the muriated tincture of iron with plenty of water. The supervention of cardiac failure may be averted by the liberal use of whisky.

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* Extract from a lecture delivered at the Hospital College of Medicine, Louisville, Ky., November 17, 1893.

Original Communications.

A STATISTICAL RECORD OF FIVE THOUSAND CASES OF SMALL-POX.*

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Recognizing the difficulty of interesting an audience by the narration of statistics simply, I have concluded to present the facts which I have to offer somewhat after the style of an object lesson. I shall mention but few facts that can not be seen clearly illustrated in the tables hanging before you.

Before calling your attention to these tables I should say that the opportunity to study and classify these five thousand cases of small-pox was afforded me in the Municipal Hospital for Infectious Diseases of Philadelphia during the period from 1870 until the early part of the present year. This period includes several epidemics of the disease, some of which were of considerable magnitude and great virulence, notably the epidemic of 1871–'72, which was almost world-wide and everywhere marked by unusual malignancy. During such visitations of the disease a very large proportion of the more severe and malignant cases were found among the admissions to the hospital. This is owing to two facts: first, since removal of patients to the hospital was not compulsory, most of the milder cases were treated at their homes; and, secondly, that a very large proportion of the patients were received from the lower class of society with constitutions exhausted or depraved by intemperance and other depressing habits. Even many of these were not received until all hope of recovery had passed. During the epidemic of 1871–'72 as many as a hundred and twenty-eight patients died in less than forty-eight hours after admission, while, indeed, a few others died in the ambulance on their way to the hospital, and all such are, of course, included in the statistics to be submitted.

I mention these facts in explanation of the unusually high death-rates to be seen in the tables. But while the death-rates are unusually high there is no disproportion in this respect between the vaccinated and the unvaccinated cases. That is to say—if the death-rate is excessively high in the one, it is to an equal degree excessively high in the other. There will therefore be no difficulty in measuring by these statistics the value of vaccination as a protective or modifying agent in small-pox.

This first table to which I shall call attention is one showing the cases classified accordingly as the disease was unmodified or modified. The former type, of course, is designated variola, and the latter varioloid, while the term small-pox, whenever used, must be understood as including both.

Table I.—*Showing the Cases divided into Variola and Varioloid.*

Disease.	Admitted.	Died.	Per cent. of deaths.
Variola	2,831	1,534	54·18
Varioloid	2,169	28	1·29
Total	5,000	1,562	31·24

All unvaccinated cases, all malignant cases, and all vaccinated cases in which the eruption advanced to the pustular stage and was attended by well-marked secondary or suppurative fever have been classified in this table as variola, while all the vaccinated cases in which the eruption was markedly abridged in its course and in which there was little or no secondary rise of temperature have been classified as varioloid. Under such a classification, a fatal result never occurs from the latter, except in greatly enfeebled constitutions or when some complication arises. While the death-rate was 54·18 per cent. from variola, it was only 1·29 per cent. from varioloid.

Table II.—*Showing the Cases classified according to the Sex of the Patients.*

Sex.	Admitted.	Died.	Per cent. of deaths.
Male	3,261	1,031	31·61
Female	1,739	531	30·54
Total	5,000	1,562	31·24

The table shows that a considerably larger number of males than females was admitted to the hospital; and also that there is practically no difference between the death-rates of the two sexes.

Although the preponderance of cases is on the side of males, yet it can not be said that sex exerts any influence whatsoever over susceptibility to small-pox, nor that the disease, all things being equal, is more fatal among one than the other. It is true that men are more frequently addicted to intemperance, and that this habit predisposes to malignancy of the disease; but, on the other hand, pregnancy in women is very liable to be followed by abortion, and when this accident occurs it always proves to be a very serious complication.

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* Read before the First Pan-American Medical Congress, September, 1893.

TABLE III.—*Showing all the Cases classified according to the Color of the Patients.*

COLOR.	Admitted.	Died.	Per cent. of deaths.
White	4,200	1,221	29·07
Black	800	341	42·62
Total	5,000	1,562	31·24

It is generally believed that small-pox is more fatal among colored persons than among whites, and the above table seems really to support such a belief; but before a reliable conclusion can be arrived at it is necessary that the patients of both colors should be observed under precisely the same circumstances—that is to say, comparison should be made between the unvaccinated of each color. Such a comparison may be seen in the following table:

TABLE IV.—*Showing the Unvaccinated Cases of Small-pox, classified according to the Color of the Patients.*

UNVACCINATED.	Admitted.	Died.	Per cent. of deaths.
White	1,173	681	58·05
Black	439	257	58·54
Total	1,612	938	58·18

Reference to the last two tables shows that of the two classes of patients—white and black—a very much larger proportion of the blacks were unvaccinated; of course, that accounts for the greater percentage of deaths among this class in the former table. In the latter table, however, where a comparison can be made between the unvaccinated of each color, it is seen that there is practically no difference in the death-rates, the deaths among the whites being at the rate of 58·05 per cent. and among the blacks 58·54 per cent.

I would not presume to say that all authors who contend that small-pox is more fatal among negroes than whites are mistaken in regard to their observations, but I wish to emphasize what I have already said—that no conclusion on this point is reliable unless both of these classes of patients have been observed under precisely the same circumstances.

TABLE V.—*Showing the Cases classified according to the Vaccine Condition of the Patients.*

	Admitted.	Died.	Per cent. of deaths.
Vaccinated in infancy, good cicatrices	1,412	124	8·78
" " " fair cicatrices	666	98	14·71
" " " poor cicatrices	1,070	290	27·10
Post-vaccinal cases	3,148	512	16·26
Unvaccinated cases	1,759	1,027	58·38
Unclassified cases	93	23	24·73
Total	5,000	1,562	31·24

In this table a comparison may be made between the vaccinated and the unvaccinated cases. For reasons already stated, the proportion of deaths in both is excessively high. Among the unvaccinated the death-rate is as high as 58·38 per cent., and among the vaccinated, as a whole, 16·26 per cent. Although high in both cases, the difference between the death-rates is very striking. If the 1,759 unvaccinated persons had been vaccinated in infancy, like the others, instead of 1,027 deaths among this class, there would have been only 286, a saving of 738 lives. Vaccination would have accomplished even more than this for these patients: it would have so modified the disease in a large proportion of those that recovered as to prevent much suffering and save them from disfigurement for life.

In examining the vaccine cicatrices of a large number of persons it is found that these scars differ considerably in appearance, and the question naturally arises, Can protection be measured to any degree by the different characteristics which they present? There is no doubt that many persons with quite inferior vaccine marks are fairly well protected, or even enjoy immunity from small-pox, while many with typical marks prove to be susceptible to the disease, and indeed often perish from it. But such results must, I feel sure, be regarded as exceptions to the rule. When a large number of patients are examined and the results tabulated, as the above table shows, the degree of protection, as indicated by the death-rates, is found to bear a very close and direct relation to the character of the vaccine cicatrices.

All of the patients represented in the tables were carefully examined on their admission to the hospital, and the number and character of their vaccine scars at once recorded. At this time it was, of course, generally impossible to foretell the final result. The scars were divided, according to their quality, into three grades, which are designated in the tables by the terms *good*, *fair*, and *poor*. Under the first head I have classified all cases presenting typical vaccine cicatrices—that is to say, cicatrices which are distinctly excavated, with well-defined margins, reticulated or foveolated, and altogether presenting the appearance of having been stamped into the skin by a sharply cut die. Under the second head I have classified all cases with scars having the same general characteristics, though much less distinctly marked. Under the third head have been classified all cases having scars which were said to have been the result of vaccination, but which in very many instances were so indistinct or uncharacteristic as to make it difficult, and sometimes even impossible, to recognize them as vaccine scars.

The cases classified under the heads of both *good* and *fair* marks had all, doubtless, passed through a well-marked, or reasonably well-marked, course of vaccina in infancy. The death-rates are respectively 8·78 and 14·71 per cent. But I am strongly of the opinion that very many of the cases classified under the head of "poor cicatrices" were never successfully vaccinated. Very often I felt fully convinced at the time of making the examination and recording the vaccine condition that such was the case, but, as the patients insisted that they had been vaccinated, I could not reject their testimony without being considered, especially by the enemies of vaccination, a partial judge. It certainly does not detract from the reputation of vaccination to know that when the vaccine process is irregular, imperfect, or spurious the protection is diminished or absent. As the mean death-rate of the cases showing *good* and *fair* cicatrices is 10·68 per cent., and the death-rate of those showing *poor* scars is 27·10 per cent., it is evident that not only very many of the latter had been imperfectly vaccinated, but that a large number had never been subjected at all to the vaccine process.

It is impossible to illustrate in this table the very striking and conclusive evidence of the protective power of vaccination that frequently came under my notice while observing these five thousand cases of small-pox—such, for instance, as witnessing, on the one hand, an unvaccinated person suffering from the confluent form of the disease, loathsome and offensive, with the final issue for several days uncertain, and on the other hand a vaccinated person undergoing a modified form of the disease, so mild and innocent in its character as not to excite any apprehension for the safety of the patient. In the former case, if recovery took place, the individual was left disfigured for life, while in the latter, after a few months had passed, there was but little, if anything, in the appearance of the individual to indicate that he had ever suffered from the disease at all.

Also, I have seen over and over again entire families brought into the hospital when all the unvaccinated children have been suffering from small-pox and the vaccinated children unaffected; have seen the former perish and the latter remain exempt from the disease, although living, eating, and sleeping in the infected atmosphere for several weeks. But I have yet to see a single unvaccinated child escape the disease under similar circumstances. Furthermore, I have more than once seen a vaccinated infant draw its daily supply of nourishment from a mother suffering from varioloid, and the infant remain as free from any symptom of the disease as if the infection were a thousand miles away and the food were received from a most wholesome source. All this is evidence of the prophylactic power of vaccination that can not be shown in mortality tables.

Under the head of "unclassified cases" in the last table are included quite a large number of patients who were vaccinated after exposure to the variolous infection, and also a few patients who died and were buried before an examination as to their vaccine condition could be made.

The next table to which I shall direct attention is one illustrating the comparative efficacy of vaccination as performed in various countries, especially in the United States, Germany, and Ireland.

Perhaps I should explain, in the first place, that the high rate of mortality exhibited under the head of "unknown" nativity is owing to the fact that many of the patients therein represented were foreigners apparently, and were received into the hospital in a moribund state, so that it was impossible to learn their nationality. I may add also that under the head of "other nativity" are included the patients who were natives of the various countries of the globe not designated in the table, excepting China and Japan, which countries furnished no patients.

Table VI.—*Showing the Cases classified as to Nationality of the Patients and their Vaccine Condition.*

	Admitted.	Died.	Per cent. of deaths.
United States:			
Not vaccinated	1,457	831	57·03
Vaccinated in infancy, good mark	686	53	7·72
" " " fair mark	375	53	14·13
" " " poor mark	594	168	28·52
Post-vaccinal cases	1,655	274	16·49
Germany:			
Not vaccinated	59	34	57·62
Vaccinated in infancy, good mark	345	33	9·56
" " " fair mark	157	19	12·10
" " " poor mark	250	47	18·80
Post-vaccinal cases	752	99	13·16
Ireland:			
Not vaccinated	168	112	66·66
Vaccinated in infancy, good mark	212	18	8·49
" " " fair mark	57	15	26·31
" " " poor mark	130	53	40·76
Post-vaccinal cases	399	86	21·55
Other Nativity:			
Not vaccinated	64	41	64·06
Vaccinated in infancy, good mark	164	18	10·97
" " " fair mark	75	10	13·33
" " " poor mark	95	21	22·10
Post-vaccinal cases	334	49	14·67
Unknown:			
Not vaccinated	11	9	81·81
Vaccinated in infancy, good mark	5	2	40·00
" " " fair mark	2	1	50·00
" " " poor mark	1	1	100·00
Post-vaccinal cases	8	4	50·00

Referring to the table, it is seen that under the three nationalities therein given the death-rates of the unvaccinated cases of the United States and Germany do not differ materially, but the death-rate of the unvaccinated cases of Ireland is very much the highest. A comparison of the post-vaccinal cases also shows that the vaccinated patients of Irish birth have perished in the largest proportion. This seems to indicate that small-pox is most fatal among the Irish—a fact which, I believe, I have noticed in every epidemic of the disease that I have witnessed.

The difference between the rates of mortality among the cases showing "good" marks, as is seen under the three nationalities mentioned, is not great, and the slight difference that does exist may be entirely accidental. But the difference between the death-rates of those showing "poor" marks is very great and decidedly in favor of the patients of German birth. The vaccinations performed in Germany prove to be more uniformly protective, and hence the death-rate among the post-vaccinal cases under this head is the lowest of any of the nationalities. All this seems to prove that vaccination is most efficaciously performed in Germany. The comparative exemption of Germany and the German army from small pox is simply a striking example of the brilliant result of careful and efficient vaccination.

When most of the vaccinations represented in the table were performed it was customary in the United States, and in Ireland also, I believe, to use humanized crusts; but in Germany fresh eighth-day lymph or arm-to-arm vaccination was the means or method employed, and this method has always given the very best results. Hence I think it is not improbable that the German patients owe their better protection to the superior quality of the vaccine lymph generally employed in their country.

There is another explanation that might be offered to account for the superior protection enjoyed by the German patients—namely, that it is the practice in Germany in performing vaccination to make numerous insertions of the vaccine virus. In examining the arms of patients of German birth it is quite common to find three distinct scars on each arm, and even a greater number is frequently met with. I have seen as many as twenty typical vaccine marks on the arms of a German patient. If multiple insertions of the vaccine lymph increase the protection against small-pox—and statistics are not wanting to show that such is the case—surely German subjects should be well protected. But, in view of the facts which will appear in the following table, I am inclined to believe that the Germans owe their superior protection from small-pox more to the quality of the vaccine virus they use than to the number of insertions they make.

Table VII.—*Showing the Cases classified as to the Number and Character of the Vaccine Scars borne by each Patient.*

	Admitted.	Died.	Per cent. of deaths.
Unvaccinated	1,512	881	58·26
Professing to have been vaccinated, but no visible mark *	247	146	59·10
Vaccinated seven days and less prior to the appearance of the variolous eruption	57	25	43·86
Vaccinated longer than seven days prior to the appearance of the variolous eruption	74	15	20·27
Vaccinated in infancy, one good mark	787	70	8·89
" " " " fair mark	430	67	15·58
" " " " poor mark	850	252	29·64
Total number showing one mark	2,067	389	18·81
Vaccinated in infancy, two good marks	265	20	7·54
" " " " fair marks	105	14	13·33
" " " " poor marks	94	22	23·40
Total number showing two marks	464	56	12·06
Vaccinated in infancy, three good marks	119	10	8·40
" " " " fair marks	45	4	8·88
" " " " poor marks	49	13	26·53
Total number showing three marks	213	27	12·67
Vaccinated in infancy, four or more good marks	247	24	9·74
Vaccinated in infancy, four or more fair marks	80	10	12·50
Vaccinated in infancy, four or more poor marks	97	11	11·34
Total number showing four or more marks	424	45	10·61

The first thing to be seen in this table is that there is practically no difference between the death-rates of the unvaccinated patients and those professing to have been vaccinated but showing no visible mark. This proves that there was either a mistake as to the alleged fact or that a vaccination which is followed by no mark is devoid of protective power, most probably the former.

The table also shows that vaccination practiced after exposure to the infection of small-pox may afford considerable protection against the disease. If it be performed within two or three days after the infection has been received into the system it is possible for the protectio ton be absolute. I have seen as many as twenty-eight children perfectly protected from small-pox by vaccination during the incubation period.* But if the vaccination be performed much less than seven days before the eruption of small-pox appears, no modifying influence will be exerted. In a considerable number of the cases included in the table under the head of "vaccinated seven days and less prior to the appearance of the variolous eruption" the patients had been vaccinated no longer than from two to four days before the eruption appeared, while a somewhat larger number had been vaccinated as long as from four to seven days before it appeared. Taking the whole number of cases under this head, it is seen that the death-rate is 43·86 per cent., while among the unvaccinated it is as high as 58·18 per cent. This shows that considerable protective influence must have been exerted by vaccination performed during that period. But a still greater influence was exerted among the cases included under the succeeding head, where vaccination is represented as having been performed longer than seven days before the small-pox eruption appeared. The death-rate here is only 20·27 per cent.

In regard to the matter of estimating the efficacy of vaccination by the number of vaccine cicatrices borne by each person, the table can not be said to support the views of most authors, nor does it accord with the experience of some other observers. It is, indeed, in striking contrast with the evidence on this point collected by Mr. Marson and tabulated by Mr. Simon. According to these authors, who derived their data from six thousand post-vaccinal cases of small-pox, the mortality-rate among patients having one vaccine scar was 7·5 per cent.; having two, 4·125 per cent.; having three, 1·75 per cent.; having four or more, 0·75 per cent. Where the vaccine scars were all well marked or typical, the loss by death is said to have been even less than is here indicated.

The table shows, it is true, that the highest death-rate is among the patients having but one vaccine mark, but unquestionably this is owing to the fact that a very much larger proportion of the patients under this head than under any other showed "poor" marks, and, as already pointed out, very many of these patients would be more correctly classified if counted among the unvaccinated cases. Those having four or more "poor" marks are in a much smaller ratio to the total number of post-vaccinal cases under that head than under any other, and the death-rate, to be sure, is remarkably low. It is, indeed, almost as low as among those showing four or more "good" marks. The explanation of the low death-rate here is that nearly all the patients classified under this head were natives of Germany, where, as already shown, vaccination is so efficiently performed that if the scars are not in every respect typical there is, nevertheless, well-marked protection.

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* The cases classified in this table as claiming to have been vaccinated, but showing no visible mark, are included in the other tables among the unvaccinated. So, also, quite a number of those classified in this table as having been vaccinated during the incubation period of small-pox are included among the vaccinated or unvaccinated in some other tables, which fact will explain some discrepancies in numbers.

* For further information on this subject see my paper on Vaccination during the Incubation Period of Variola, published in the *Transactions of the Ninth International Medical Congress*, vol. iv, p. 160.

Referring again to the table, it is seen that, where the vaccine scars are typical, there is no relation between the number of such scars and the degree of protection conferred against small-pox. Indeed, it so happens in the table that the death-rate among the patients having but one "good" mark is a little lower than among those having four or more "good" marks. There is no doubt that vaccina characterized by a single typical vesicle destroys in the individual all susceptibility to small-pox, and it would be impossible for multiple vesicles to do more than that. As a safeguard against failure, however, or when using long-humanized virus, it is advisable to make several insertions; but I must repeat that it is my positive conviction that quality of vaccine lymph has far more to do with securing efficient vaccination than multiple insertions have.

(*To be concluded.*)

THE ALBUMINURIA OF ADOLESCENCE.*

By PAUL E. TIEMANN, M. D.

During the last few years I have been surprised at the frequency with which albuminuria has appeared in young men and boys.

Out of a total of nearly two thousand examinations that I have made in the last few years, the great majority of which were of adult males, the percentage of albuminuria was a little over nine in a hundred. Out of this total, a hundred and eighty-six were below twenty-one years of age (few, if any, being females), and in these the total albuminurias were fifty-one, or 27·4 per cent.

As I knew very little about the subject of this paper, I determined to investigate it, and the results are laid before you to-night. I hope that their recital will not be wearisome to you. I can assure you beforehand that I have never found the topic a "dry" one.

Ætiology and Occurrence.—Intermittent albuminuria occurs in the majority of cases among young persons. Thus Dubreuilh (1), in thirty-four males with this symptom, found the average age to be twenty-three, fourteen being between sixteen and twenty. In five females it was fourteen, all being below twenty.

Saundby (2), out of forty-two cases in out-patients with various ailments, classed sixteen among the albuminurias of youth.

Finot (3) made repeated examinations of the urine of seventeen pupils of a military school for thirty-five consecutive days, under various conditions and at different hours, and found albumin at some time or other in all but three.

Other observations in which the percentages of albuminuria were high have been made on soldiers (who are apt to be young recruits, at least in Continental armies). Thus Capitan (4) found it in 44·9 per cent.; Van Noorden (5), three to thirty-five per cent.; and Chateauborg (6) in two hundred and one out of two hundred and thirty cases. Dukes was struck with the frequency with which he encountered periodical albuminuria among the boys at Rugby. Stewart found albumin among children in from four to sixty per cent. Goodhart (7) states that, out of thirty-nine cases of albuminuria without known cause, twenty-seven were below thirty years of age. In thirty-two the albumin disappeared in forty-eight hours.

Tyson (8) says that albuminuria occurs in children between the ages of nine and eighteen without apparent reason; its origin is renal, but casts and other evidences of Bright's disease are absent. It is much more frequent in boys than in girls; is increased by the ingestion of food and by fatigue; is almost always absent in the early morning, returning with the renewal of muscular exercise without reference to food. While it is impossible to definitely account for its causation, he thinks it may be due to a defect in the composition of the albumin of the blood caused by malassimilation, in consequence of which it escapes through the walls of the blood-vessels. Still, no chemical difference between the albumin in cases of the functional variety and that of those with renal disease has as yet been discovered.

Kinnicutt (9) attributes the albuminuria to the irritation of the kidneys by oxalates, urates, uric acid, etc., and the resultant vaso-motor disturbance, whence a transient dilatation of the renal arteries, retarded blood current in the glomerular vessels, and temporary alteration in the function of the glomerular epithelium.

Gaston (10) and Lecorché (11) believe that in the majority of cases there must be a pathological change of a fleeting character, too trivial perhaps to be noticed, such as a slight localized glomerulo-nephritis.

Fürbringer (12) thinks it may be due to a dilatation of the vessel wall and a diminution in the rapidity of the blood current, this change being partly dependent upon local and independent vaso-motor centers.

Herringham (13) considers it as generally the sequel to some acute disease, especially the exanthemata, or to rheumatism or malarial disease.

Da Costa (14) says the kidneys become congested from the irritation of uric acid, oxalates, and urates, and there may be slight inflammatory changes in the vascular cortex.

Dukes (15) claims it is caused by arterial hyperæmia, as evidenced by the hard pulse he frequently found, and which he regarded as a valuable diagnostic symptom. The sudden change from the recumbent to the upright position is responsible for the albuminuria soon after rising, and he believes that if the person could be very gradually moved from a horizontal to a vertical plane, thereby giving the circulation a chance to accommodate itself, this would not occur so soon; conversely, if human beings roosted like chickens, the albuminuria would be constant, not intermittent.

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* Read before the Hospital Graduates' Club, January 25, 1894.

Beneke (16) attributes it to the relative hypertrophy of the heart at puberty, the vessels remaining comparatively narrow, an increased arterial tension with hyperæmia resulting.

Wood (17) ascribes the same cause in some; in others, the irritation of non-oxidized substances in the tubules. The urine of children, he says, is very apt to be concentrated, because they do not drink enough fluid. He mentions several cases of slight albuminuria, with casts and blood, in which the specific gravity was between 1·028 and 1·034; but all symptoms disappeared as soon as the urine was diluted.

Lucas (18) maintains that albuminuria of adolescence is only one of the manifestations of rhachitis, as evidenced by spinal curvatures, enlarged epiphyses, flat-feet, and knock-knees, often seen developing at this period.

Heredity.—Dubreuilh (1) cites two cases of intermittent albuminuria with oxaluria in which the patients finally recovered. One was a young man of nineteen years in whose brother Sir William Gull had discovered the same condition several years before, though at that time the latter's urine was normal. The other was a rather delicate youth of nineteen, whose younger brother also had albuminuria.

Lecorché (11) and Talamon instance two sisters whose father died of Bright's disease, whose paternal and maternal grandmothers were both albuminuriacs, and whose paternal grandfather died of diabetes. The girls had albuminuria for a long time without any apparent effect upon their health.

Teissier (19) states that these cases of periodical albuminuria are the children of arthritic parents, and are themselves destined to become gouty or rheumatic.

Reflex Disturbances; Extremes of Temperature.—Auld (20) quotes the records of the London Fever Hospital to show that scarlatinal nephritis is most frequent during hot and relaxing weather, and also affirms that apparently healthy persons may have slight albuminuria from the same cause. He describes the experiments of Senator, who discovered albumin and casts in the urine of animals whose temperature had been raised 1·5° to 3° C.*

Harley (21) makes reference to Cheen's *Diseases of India*, in which the latter speaks of the frequency of albuminuria, apart from organic mischief, in anæmic Europeans. While so often observed in whites, Harley found albumin extremely seldom in the urine of natives (absent in every one of two hundred healthy young recruits); on the other hand, glycosuria was readily demonstrated in almost all of these men.

The doctor's statement that only five per cent. of them ever touched meat, the rest living upon rice and other vegetables, might explain this phenomenon. A medical missionary who had spent many years in India told me that his experience had been similar to Harley's.

Barnes (22), while physician to the Seaman's Hospital, often treated cases of immersion during cold weather that were followed by a transient albuminuria.

Ellis (23) describes experiments upon healthy young rabbits and dogs in which they were shaved, subjected to a high temperature, and then suddenly plunged into ice water, in which they were kept for one to three minutes. There was a decided fall in temperature, the animals trembling for some hours afterward, though placed in a warm atmosphere. In one or two days albuminuria developed with a few hyaline casts, disappearing after a time. In a few it persisted, and the animals died. Examination showed interstitial inflammation of the internal organs, especially the liver and kidneys.

Bouchard (24) speaks of reflex albuminuria provoked by excitation of the cutaneous nerves. Thus at the Hospital St. Louis, where frictions with turpentine were frequently employed, it was noticed that urines which were entirely normal before the friction were frequently albuminous afterward, and this albuminuria appeared too quickly for the turpentine to have been absorbed.

Food and digestion do not, I think, have any marked influence in the causation of albuminuria; certainly in chronic cases it is most marked in the forenoon and middle of the day before much has been eaten, and is least in the afternoon and evening when digestion is at its height. Again it has been found that when the subjects stayed in bed albuminuria did not appear, though the meals were eaten regularly, but that it immediately developed when they got up, even though they fasted. (See Pavy, London *Lancet*, 1886, i.) Admixture of prostatic and seminal fluid with the urine was said by Goodhart (7) to account for the albuminuria in eight of his thirty-nine cases.

Simon (2), on the contrary, declares that these fluids do not contain any albuminous body coagulable by heat. Out of one hundred cases that I examined microscopically I found spermatozoa only once in any quantity, and here two successive analyses failed to discover albumin.

In another case spermatozoa were found only a few times out of many careful examinations, and yet there was a well-marked periodical albuminuria extending over a period of one year.

Return to the Embryonic Type.—Finally, Ribbert (13), who found that embryonic kidneys almost invariably secreted albuminous urine (as do the kidneys of the newly born), advances the theory that slight causes may induce the adolescent kidney to temporarily assume this embryonic quality.

If we may credit the statement of some authorities, such as Ballet (25) and Dreyfuss-Brissac (26), that albuminuria is extremely uncommon in cases of senile kidney (and by this they mean a small, red, contracted kidney), this assumption of Ribbert's is not an extravagant one, for in the one instance we have a youthful organ which is the seat of unusual growth and activity, while in the other there is a condition of atrophy and decay.

Diagnosis.—Pavy (27) claims that the following points enable him to differentiate between physiological and pathological albuminurias:

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* In a number of analyses that I made last August and September I was impressed with the frequency that albuminuria showed itself when there was a combination of high temperature and a high degree of humidity.

a. Absence of albumin in the early morning, its presence in the forenoon, reaching a maximum toward midday, then decreasing toward evening, and often disappearing entirely at bed times.

This series of phenomena is repeated day after day and likened by him to the periodical appearance and disappearance of phosphates.

b. No impairment of the health and no constitutional evidences of nephritis, such as cardiac hypertrophy or arterial tension, dropsy, retinitis, etc.

c. Absence of tube casts, presence of oxalate of lime, and a urine of high specific gravity.

While many authorities agree with Pavy (see Davis (28), Bouchard (24), Dubreuilh, Sir Andrew Clark (29), and others mentioned by Vanderpoel (6)) that an albuminuria of such a description is not due to nephritis, whatever may be its ultimate tendency, there are others who take an opposite view.

Thus Goodhart (in Keating's *Cyclopædia of the Diseases of Children*, 1890, vol. iii) says that "any albumin that is present again and again in the urine of any child or adult is as conformable to the hypothesis of the existence of a nephritis * as it is to that of functional disease."

Lecorché and Talamon (11) incline to this belief, as does also Collier (30), who, when interne at the Wolverhampton Hospital, treated a large number of patients with nephritis, and found that the early morning urine often contained only the smallest traces of albumin, the amount of which was also at other times in the day greatly decreased by rest in bed.

Bartels (31) relates the case of a vigorous young man who had albuminuria upon admission to the hospital, but none early the next morning. He remained a patient for four months, and as long as he kept his bed albumin was never found. Indeed, its sudden appearance betrayed the fact that he had disobeyed orders and got up. Although frequent and thorough search was made, casts were never detected. Nevertheless, a diagnosis of contracted kidney was made, based upon the low specific gravity of the urine, a tense and rigid radial pulse, and hypertrophy of the left ventricle. Casts, if present in quantity or constantly, are indications of Bright's disease, although conversely they may be scanty or even absent in fatal cases of nephritis. Thus Washburne (32) describes two cases of persistent albuminuria that died within four years after the first examination, in which tube casts or cellular elements could never be found.

Radomyski (33), using the centrifugal apparatus, found casts without albumin in urines of specific gravity ranging from high to low; still he did not consider them as the product of entirely normal kidneys.

Danforth (34) says that if only occasional hyaline casts are discovered, the exudation is probably very slight; if the cast is smooth in outline and free from "twists," it would seem to indicate that the tubule had not been invaded by pathological connective tissue.

Other authorities quoted by Vanderpoel do not consider casts, under certain circumstances, to be necessarily a symptom of renal disease.

Cardiac hypertrophy, rapid pulse, and arterial tension would indicate nephritis.

Kinnicutt (9) made sphygmographic tracings in all his cases and found the tension always either normal or subnormal. Vanderpoel describes the pulse of functional albuminuria as a soft one. Dukes, on the contrary, found it apt to be hard and rigid. In my experience it has been soft.

The symptoms and course will be best described by the relation of a few cases.

(*a*) Merklen (35) gives an account of a boy of sixteen years, rapidly growing, and of arthritic parents. Well-marked albuminuria from noon till midnight; none from that time until early in the forenoon; albumin never present in the first urine passed in the morning on rising. No cylinders; only a few red blood-cells. Milk diet had no effect on the albuminuria.

The boy's eyes were carefully examined by a competent oculist and found to be normal, except that the retinal veins were moderately congested, this condition being considered by Merklen to be analogous to the passive congestion which he observed in the boy's extremities and indicative of vaso motor atony. In an attack of pulmonary congestion, with high temperature, during which he was kept in bed for three weeks, albumin was never found, though the urine was examined daily at different hours. It promptly reappeared as soon as he was allowed to get up, though from that time it was less marked and the general health was better.

(*b*) R. H. Meade (36) relates the case of a young man whose early morning urine was never albuminous, while that of the forenoon and night was decidedly so. The microscope showed a few hyaline casts and some oxalates. He was delicate and nervous, but had no indications of organic disease. He was confined to the bed two months by an accident, and all this time the urine was absolutely free from albumin, which showed itself at once when he began to go about again. Here treatment affected nothing.

(*c*) T. M. Rooke (37) had under observation several growing girls between fourteen and sixteen years who had no symptoms of renal disease other than slight anæmia and albuminuria. The latter was regularly absent upon rising, though uniformly present later in the day. It never appeared when the girls were kept in bed.

(*d*) Herringham (13) tells of a boy of thirteen years, rather thin and pale, with a feeble, soft pulse. While in bed albuminuria was present only three times out of thirty-four, but when he was up it was found twenty-nine times in fifty analyses. The amount or kind of food did not seem to influence the albuminuria—in fact, this was most marked at noon, just before dinner. It then diminished, and later in the evening was either absent or reduced to a mere trace. No casts were ever found, but oxalate-of-calcium crystals were not infrequent.

(*e*) William Collins (38) gives details of three periodical albuminuriacs, aged eighteen, twenty-two, and twenty-five years. All had nervous depression, languor, indigestion, constipation, and headache.

The specific gravity ranged between 1·020 and 1·030; there was well-marked oxaluria, which seemed to be in direct ratio to the quantity of albumin. These all finally recovered.

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* In the case of young persons I understand this to mean the parenchymatous variety, the contracted kidney being quite infrequent in early life.

(*f*) Mareau (39) devotes an article to a child of ten years, apparently in the best of health, who had never had scarlatina or any other serious illness. His father, an expert chemist and biologist, accidentally discovered the albuminuria, and afterward made a large number of tests of the urine. Out of four hundred and forty-seven examinations made while the child was in a normal state of health albumin was absent in 46·75 per cent.; present in small traces (three milligrammes to the litre) in 43·18 per cent.; and in well-marked traces (two to sixty centigrammes to the litre) in 10 per cent. In the urine passed upon rising, albumin was absent forty-five times, present (generally only in small traces) sixty-eight times; but this preponderance of albuminous urine was partly explained by the fact that the child went to bed soon after supper and did not, as a rule, urinate until it arose. Whenever the bladder was emptied during the night, the morning's urine was regularly normal.

During an attack of rötheln seventy-four examinations were made; in the period of invasion and convalescence well-marked albuminuria was observed almost exclusively after breakfast and dinner, while throughout the period of eruption, when the child would not eat, it was only the urine passed upon rising that contained any quantity of albumin.

On the assumption that about forty-five cubic centimetres of normal urine are sufficient to destroy one kilogramme of living matter, whereas from a hundred and twenty-five to a hundred and fifty cubic centimetres of nephritic urine are necessary to produce the same result, Mareau made use of injections of the urine taken from albuminous samples passed during the day, and found that only about eighty cubic centimetres killed a rabbit weighing 1,765 grammes.

Lecorché and Talamon (11) relate the further history of this child. His father wrote them six years later that he was in excellent health, of fine muscular development, and had steadily continued his studies. As a general thing, albumin was absent or present only in traces, though it was apt to become more abundant and continuous during the course of the minor ailments to which children are prone. Treatment had availed very little; sea baths had no other effect than to temporarily change the hour at which the albumin was most abundant; tonics decreased the quantity of albumin and made it disappear for a time. A milk diet made the child thin and weak if kept up even for a few weeks. Casts had never been found. An examination of the thorax showed that the cardiac impulse was forcible and the sounds exaggerated, a symptom which the authors regard with suspicion, though it might have been only the overaction frequently present at puberty.

E. S. Wood (17) made repeated analyses of the urine of a boy (aged thirteen years when first seen) from February, 1885, till February, 1891. The first examination showed a trace of albumin, a few red blood-cells, renal cells, and an occasional hyaline cast. Through the spring, summer, and autumn of the same year albumin was present with hyaline casts, oxalate of calcium, and uric acid; the specific gravity was rather high.

In August and October, 1886, albumin and casts were absent, but there was an oxaluria and a specific gravity between 1·024 and 1·030. In July, 1887, and January, 1888, the urine was normal; in July, 1890, a trace of albumin, but none the following month, and none in 1891.

(*g*) Washburne (32) had under his care a robust young man of seventeen years whose occupation was an outdoor one. His urine was albuminous on a number of different occasions, but never at 1 A. M. The albuminuria was greatest after a long horseback ride on a cold November day; in fact, it was more marked in winter than in summer. One year later several analyses showed the urine to be entirely normal.

(*h*) Ralfe (40) points out the occasional connection between albuminuria and hæmoglobinuria, the latter being essentially a disease of young adult males. He maintains that albuminuria associated with hæmoglobinuria often shows the same daily variation as the functional and uncomplicated variety, and describes three cases of persistent albuminuria in which the subjects passed bloody urine after being chilled.

(*i*) The following are examples of malarial albuminuria (Dubreuilh): In the first the urine was markedly albuminous in the forenoon and at 11 P. M.; normal at noon. In the other there was a clear history of intermittent fever some time before; daily albuminuria greatest at 9 A. M. and 9 P. M.; absent at 3 P. M. The albuminous urine was distinctly acid; specific gravity, 1·020 or thereabouts; the non-albuminous was 1·008, pale, and only slightly acid. Diuretics produced a cure.

(*j*) I have had under observation since November, 1892, a boy of sixteen who appears in good health except that he has had a typical periodical albuminuria. He has never had any serious illness; no history of scarlatina. His complexion is somewhat sallow, but the number of red blood-cells is normal, and, though rather undersized for his age, he is muscular and well built. The heart and pulse are entirely normal, and the fundus of the eye, examined this month by Dr. J. E. Weeks, does not show the slightest evidence of renal disease.

As a rule, the early morning urine has been free from albumin (seventy-eight out of eighty-four examinations), while the noon urine has been as regularly more or less markedly albuminous (ninety-eight in a hundred and thirteen). Thirty-three analyses of the forenoon urine (8.30 A. M. to 12 M.) were made: eighteen were albuminous, fifteen non-albuminous. Out of ninety-three specimens examined that were passed at bedtime, forty-two contained albumin and fifty-one did not.

In a hundred and forty-five microscopical examinations, in most of which the sediment was obtained by the centrifugal apparatus, which was often further controlled by examination of a specimen that had stood twelve to eighteen hours, I found undoubted casts (hyaline and epithelial) only four or five times, and then they were very scanty. Oxalate of calcium and mucus were often present, uric acid occasionally; sometimes a few red or white blood-cells.

There seemed to be a proportionate ratio at times between the quantity of oxalates and lithates and that of the albumin, but this was by no means constant, for often when the latter was present in larger amount there was absolutely no sediment beyond a few superficial epithelial cells.

The specific gravity ranged between 1·020 and 1·030, rarely below the former figure. In November and December last it was often very high and oxalates and lithates were abundant. I learned that he drank very little fluid, so I put him on dilute nitrohydrochloric acid before meals with a glassful of hot water three or four times a day. This treatment has greatly diminished the quantity of albumin, so that now it is either absent at noon (the time when it was formerly most marked) or present only in traces. The specific gravity is much lower and the oxalates and lithates are not nearly so abundant.

(*k*) During the past six months I examined the urines of a number of boys between ten and twenty years old; almost all led an active out-of-door existence, and, with comparatively few exceptions, were fully up to the average in health and physique, if not above it.

The first series of examinations was made in August, September, and October, between 7 and 8.30 P. M., and comprised a hundred and four different boys selected at random, each being examined but once. Their general condition was noted and the state of the thoracic organs carefully investigated, but very little could be learned of their past history, as no boy that had a home was received at the institution where they were, and their personal recollections were very slight. The urine was tested for albumin (usually by the heat test),* in the majority of cases for sugar, and the specific gravity was taken. All but four were examined microscopically; in nearly all the centrifugal machine was used, often supplemented by a specimen set aside for twenty-four hours, though this latter procedure gave no better results, often not so good as the apparatus.

The following is a summary of the results of these examinations:

Total number examined, 104; total number of albuminurias, 31; percentage of albuminurias, 29·8 per cent.

Total albuminurias with casts, 9; number in which casts were at all abundant, including hyaline, granular, and epithelial, 5; number in which they were hyaline and scanty, 4; number with pus enough to account for albuminuria (urethritis), 2; number of albuminurias in which the subject was in poor health or temporarily ill, 10. Of these, there were cardiac disease, 1; anæmia, rhachitis, 4; acute bronchitis, amygdalitis, 3; suspected phthisis, 2. Number of persons in poor health or temporarily ill (without albuminuria), 17; cardiac, 9; rhachitis (anæmia), 4; specific disease, 1; bronchitis, 2; lymphoma (abdominal glands), 1.

The cases of cardiac disease were notably free from albumin, as I have often noticed as long as compensation is kept up.

Microscopical examinations, 100; casts (two or more, in three or more slides) present in 22; with albumin, 9; without albumin, 13; well-marked oxaluria, 9; well-marked lithuria, 5; spermatozoa in noticeable quantity, 1.†

Another series of a hundred and thirty-six examinations was made this past fall and winter; eighty-eight urines were passed between 1 and 2 P. M., and forty-eight between 6 and 8 P. M. Of these, twenty-two were albuminous, or sixteen per cent. This lower percentage of albuminuria may have been partly due to the fact that in the later tests were included a number of boys who did not show any albumin in the earlier ones.

Of the albuminurias observed in the first series, twenty-one were lost track of, six disappeared, and three persisted. Out of these last, two were associated with glycosuria and (microscopically) abundant casts. The third was a boy of fifteen, in whom no apparent cause was to be found for the presence of the albumin.

Sugar was found three times out of a hundred and ninety-one analyses—twice associated with albuminuria and abundant casts, once with cardiac disease.

Of the records of specific gravity, fifty-two were below 1·020, a hundred and five between 1·020 and 1·025, fifty-three between 1·025 and 1·030, eight between 1·030 and 1·035, and two over 1·035.

In the albuminous urines (where taken) the specific gravity ranged as follows: Below 1·015, one; 1·015 to 1·020, eleven; 1·020 to 1·025, twenty-four; 1·025 to 1·030, nine; 1·030 to 1·035, one; 1·037, one—total, thirty-seven.

To recapitulate: Two hundred and forty analyses, fifty-three albuminurias (twenty-two per cent.); three glycosurias (1·25 per cent.).

Prognosis.—Authorities differ widely as to the significance of intermittent albuminurias, some contending that they are harmless, others that they are the precursors of chronic Bright's disease unless promptly treated. Vanderpoel relates two instances of what at first appeared to be the functional variety which finally developed nephritis, and in his paper a majority of the authors quoted regarded the continued presence of albumin as a pathological symptom.

Dubreuilh (18) says that albuminuria may continue for months or years; may stop for a while and again appear; it is never certain that it has entirely ceased. When present, it is a "black cloud" on the horizon.

Lecorché and Talamon (11) maintain that it is impossible to attach any diagnostic value to the presence of albuminuria in children; and Washburne (32) says that kidneys which have once shown themselves to be impaired, even if only for a short time, will be more liable to disease in later life than those which have been normal.

Treatment.—The form associated with high specific gravity, oxaluria, and lithuria seems to be the most amenable to treatment. As hepatic stimulants, dilute nitro-hydrochloric acid and sodium phosphate are regarded as specifics, the latter being preferable when constipation is present. An occasional dose of calomel or blue mass is to be regarded in the same light.

Other valuable aids are the weak alkaline waters, plenty of ordinary water, either hot or cold, tonics, regulation of the diet and rational hygiene.

In conclusion, I wish to express my thanks to Dr. F. A. Manning, Dr. J. E. Weeks, and Dr. Henry E. Crampton for assistance rendered and courtesies extended.

List of Authorities.

1. William Dubreuilh. *Revue de médecine*, 1887, vol. vii.
2. R. Saundby. *British Medical Journal*, 1879, vol. i, 1880, vol. i.
3. Ch. Finot. *Séances de la Société de biologie*, 1892, iv.
4, 5, 6. Vanderpoel. *Medical Record*, November 11, 1893.
7. Goodhart. *British Medical Journal*, 1890.
8. Tyson in Keating's *Cyclopædia of the Diseases of Children*, 1890, vol. iii.
9. F. P. Kinnicutt. *Archives of Medicine*, New York, 1882, vol. vii.
10. Gaston. *Archiv. gén. de méd.*, 1892, vol. ii.
11. Lecorché et Talamon. *La Méd. mod.*, 1892.
12. P. Fürbinger. *Deutsches Archiv für klin. Med.*, 1880, vol. xxvii.
13. W. P. Herringham. *St. Bartholomew's Hospital Reports*, 1890, vol. xxvi; *British Medical Journal*, 1891, vol. i.
14. Da Costa. *American Journal of the Medical Sciences*, 1893, cv.
15. Dukes. *Lancet*, 1891, ii.

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* As described by Neubauer and Vogel, Part I, p. 264.

† Two analyses failed to discover albumin.

16. Beneke. *British Medical Journal*, 1878.

17. E. S. Wood. *Boston Medical and Surgical Journal*, 1892, cxxvi.

18. R. C. Lucas. *British Medical Journal*, 1884, i.

19. Teissier. Quoted by Dubreuilh. *Rev. de méd.*, 1887, vii.

20. Auld. *Lancet*, 1886, ii.

21. P. O. W. Harley. *Indian Medical Gazette*, 1888, xxiii.

22. Barnes. *Lancet*, 1893, i.

23. Ellis. *Boston Medical and Surgical Journal*, cii.

24. Bouchard. *Bull. de l'Acad. de méd.*, 1892, xxviii.

25. Ballet. *Revue de méd.*, 1881, i,

26. Dreyfuss-Brissac. *Gaz. hebd. de méd. et de chirurg.*, 1881.

27. Pavy. *Lancet*, 1885, ii.

28. W. B. Davis. *Medical Record*, 1891, xxxix.

29. Sir Andrew Clark. *British Medical Journal*, 1884, ii.

30. William Collier. *Lancet*, 1886, i.

31. Bartels. In von Ziemssen's *Encyclopædia*, vol. xv.

32. W. H. Washburne. *Medical News*, 1893, lxii.

33. Radomyski. *Die Harncylinder im eiweissfreien Urin.* Dorpat, 1892.

34. Danforth. *Medical News*, 1892, lxi.

35. Merklen. *La France méd.*, 1885, i.

36. R. H. Meade. *Lancet*, 1879, i.

37. T. M. Rooke. *British Medical Journal*, 1878.

38. William Collins. *Lancet*, 1886, i.

39. Ernest Mareau. *Rev. de méd.*, 1886.

40. Ralfe. *Lancet*, 1886, ii.

INOPERABLE SARCOMA OF THE NOSE.

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Adopting Plicque's * classification of malignant tumors of the nasal cavities, the following case is placed in the fourth or inoperable class:

On September 21, 1893, J. L., male, aged sixty-two, by occupation a farmer, was referred to me for examination and advice by Dr. Wiest and Dr. Toplif, of Longmont, Col.

In the family history of the patient there was nothing of interest except that his mother died at the age of seventy of a "tumor" of the liver. He has always been healthy and strong; is the father of three children, one of whom died at the age of five weeks of "scrofula" and a "troublesome sore on the neck." He has been a sufferer from "catarrh" for twenty years, which he states has been gradually getting worse. Present illness dates back several years; the exact date of its origin is indefinite. Three years ago he first noticed that the discharge from his nose was becoming offensive. Several years ago he lost the sense of smell, which has not returned. In April, 1890, he began having intense pain in the forehead. In August of the same year the region of the left superior maxillary and malar bones became swollen. There was a burning sensation in the region of the cavity of the antrum. About the same time there developed partial facial paralysis of motion, involving the superficial muscles from the lower lid to the upper lip upon the left side. There was slight loss of sensation of the upper lip. Since August his strength has been rapidly failing; his appetite has been nil; on account of the intense pain, he has been unable to obtain a night's rest. The character of the pain has been lancinating, becoming more and more intense of late, radiating from the antrum to the left side and root of the nose and forehead, being at times very intense in the occipital region.

Upon examination, we find a large, well-developed man, somewhat emaciated, with an expression of intense suffering upon his face. A decided swelling exists over the middle and malar portions of the left superior maxillary bone and over the malar bone. The skin covering this region is tense and of a dusky hue. The eye is watery. Examination of the nose reveals a small polyp springing from the under surface of the middle turbinate on the left side, and a considerable amount of thick, dark-green pus with an intensely fœtid odor—the odor of necrotic tissue. The existence of the pain, the fœtid odor, the purulent discharge, the swelling, and the presence of the nasal polyp, at once directed our attention to the probability of an existing, long-standing empyema of the antrum. The intensity of the symptoms and the odor pointed also to a syphilitic lesion or some form of malignant growth. The absence of any history of syphilis or of any previous symptom of that affection led us to believe that the case was probably one of either cancer or long-standing antrum abscess. Transillumination of the cavity of the antrum revealed characteristic and definite results, and the advisability of opening the antrum was apparent. Upon gaining the patient's consent, the antrum was opened by Dr. Bartleson through the alveolar process, when there was at once a profuse discharge of green, intensely fœtid pus. A gold-plated tube was firmly fixed in the opening, antiseptic and stimulating solutions were given to the patient, and he was advised to return home and continue washing the antrum for a period of time. The polyp was removed with the cold snare. The result expected was either great improvement or, if the case proved one of malignant growth, it would rapidly progress. Some relief to the pain and some correction to the odor were obtained. Soon the symptoms returned with increased violence, and on the 20th of October he presented himself again. On the 19th of October he had his first nosebleed, which was quite profuse. At this time also there was noticed difficulty in swallowing, especially liquids. Upon examining him the swelling over the cheek was seen to be slightly increased. The examination of the nose revealed a small grayish, irregular mass beneath the middle turbinated bone in the neighborhood of the ostium maxillare. From the rapid increase in the symptoms some form of malignant growth was quite definitely settled upon as a most likely diagnosis. This outgrowth appearing in the nose gave additional proof to the diagnosis, and a small portion removed with a cutting forceps was examined microscopically by Dr. Axtel. It proved to be, according to the doctor's report, a large-celled sarcoma, in which were found many small round cells, embryonic bloodvessels, and a slight attempt at connective-tissue formation. On October 25th the patient discharged two large masses of necrosed tissue from the nose. There also appeared some difficulty in vision. An examination by Dr. Le Mond detected interference with the action of the internal rectus, causing diplopia. There was also considerable œdema of the ocular and palpebral conjunctiva of the lower lid. The pain continued to increase, becoming especially marked at the base of the brain. The difficulty of swallowing rapidly increased, the patient's strength soon failed, and he died of exhaustion November 24, 1893. Unfortunately, an autopsy could not be obtained.

At no time were any of the adjacent glands enlarged or affected.

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* A Study of the Diagnosis and Treatment of Malignant Tumors of the Nasal Fossæ. *Journal of Laryngology and Rhinology*, May, 1890.

Passing over the interest attached to the existence of such rare growths in such still rarer situations, the case reported presents several points worthy of attention:

1. *The anatomical parts involved*, as indicated by the subsequent train of symptoms. (*a*) Paralysis of motion, involving the periphery of branches of the facial distributed over the superior maxillary bone, showing local pressure. (*b*) Paralysis of sensation due to pressure in the course of the second division of the fifth. (*c*) Paralysis of deglutition due to pressure upon Meckel's ganglion, from which are derived the palatine nerves which supply muscles largely concerned in the act of swallowing. (*d*) The pain in the face and eye, accounted for by pressure upon branches of the fifth. (*e*) The pain in the eye and that in the occipital region, accounted for by pressure in the neighborhood of the sphenoid bone. Finally, there is every reason to believe that from these pressure symptoms the tumor must have existed not only in the nose and in the antrum, but must have extended into the spheno-maxillary fossa, as well as into the body of the sphenoid bone.

2. *The presence of the nasal polyp.* This brings us to the much-discussed question of the relation of polypi to the development of malignant tumors. It is plain that in this case the polyp was simply coexistent.

3. *The necessity of determining the point of origin of the growth* as well as its extent. This is particularly important in the matter of the treatment, for if it could have been definitely determined that the growth began in the nose and extended only into the antrum and the adjacent superior maxillary bone, an operation might have been undertaken. With the intensity of the symptoms referring us to extensive nerve pressure and the small amount of nasal disturbance, one might definitely conclude that the growth did not begin in the nose and that it extended into deep structures.

4. *The intensely fœtid discharge from the antrum.* This discharge was characteristic of necrosed tissue, and, while in many cases of long-standing empyema of the antrum we have a fœtid odor, still the difference between the odor from abscess of this cavity and the penetrating fœtor found in malignant cases merits attention as a differential diagnostic feature.

5. *The severe pain in the forehead.* This occurred early in the case reported above, and in the majority of cases of malignant tumors of the nose this appears as an early symptom. In an admirable report of five cases of malignant tumor of the nose by Neuman * this symptom is particularly noticeable.

The Presbyterian Hospital of Philadelphia.—The last will of Mrs. Martha Abbey gives to the institution the sum of $55,000. A part of this is to be received at once, and a part is reversionary upon the death of certain individual beneficiaries.

The Buffalo Academy of Medicine.—At the last meeting of the Section in Medicine, on Tuesday evening, the 13th inst., the special order was a paper on Stimulation and Stimulants, by Dr. Eli H. Long.

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MEDICAL OBSERVATIONS AMONG THE ESKIMOS.

In the March number of the *New York Journal of Gynæcology and Obstetrics* there is an interesting article with this title, by Dr. Frederick A. Cook, the ethnologist to the first Peary North Greenland Expedition, which was read by invitation before the New York Obstetrical Society on January 16th.

The Eskimos who dwell between the seventy-sixth and seventy-ninth parallels live on the coast in a region of eternal ice and snow, are hemmed in by glaciers, can not therefore leave their locality, and have no regular communication with other portions of the world. They live on an absolute meat diet. Two thirds of this meat is raw and frozen and about one third is cooked. For nine or ten months of the year they are compelled to melt the ice or snow to get water to drink. They use no salt or condiment of any kind in their food—an exceedingly interesting fact. They do not bathe during their whole lives.

The average man is five feet one inch and a half in height, and his average weight is a hundred and thirty-five pounds, while the woman is four feet eight inches in height and has an average weight of a hundred and eighteen pounds. The men wear their hair as long as the women, and allow it to drop over their faces to protect them from the extreme cold. The muscular outlines of the body are nearly obliterated from the fact that they have immediately beneath the skin a layer of blubber or areolar tissue which protects them against extreme cold. The least excitement among them will cause blood to flow freely from their mucous membranes, and a slight cut will bleed for an hour or two, showing, Dr. Cook thinks, that they are blessed with a superabundance of blood.

The girls are marriageable when they are twelve or fourteen years old. The young men are usually ten years older. Although the girls attain their size early, they do not menstruate until the age of nineteen or twenty years. When a woman is about to give birth to a child she is put into a house and given frozen meat sufficient to last for two weeks and also some blubber and oil. If she survives the ordeal and the baby is heard to cry, the others will come in and help her; but if the baby's cries are not heard, that house will not be entered again. The common impression is, says Dr. Cook, that aboriginal women give birth to children easily, but it is not so with these women. Deaths in childbirth are not at all uncommon. From the histories he has obtained he has been led to believe that there are some cases of puerperal peritonitis, and the natural filth of the people, the author adds, would favor such a condition. The umbilical cord is severed with stones and is tied with a piece of dirty sinew.

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* *Annals of Surgery*, July, 1891.

During the whole of the long arctic night the secretions are diminished and the passions depressed, resulting in great muscular debility. The passions of these people are periodical, and their courtship is usually carried on soon after the return of the sun; in fact, at this time they almost tremble from the intensity of their passions, and for several weeks most of their time is taken up in gratifying them.

Their teeth are in good condition, though short and worn. During the arctic night the menstrual function is usually suppressed, not more than one woman in ten menstruating. The Eskimos do not consume so much oil as is generally supposed; they eat a good deal of fat as we do cheese, but not as a regular diet. Dr. Cook can not say why lactation continues so long (from four to six years). Among the northern tribes there is very little illness except rheumatism, occasionally follicular amygdalitis, and mild forms of *la grippe*, whereas further south not less than fifty per cent. of them have consumption. Every year there is an epidemic of *la grippe* that carries away thousands of the people in southern Greenland and Labrador. They have no system of medical treatment for their diseases. During the period of daylight menstruation recurs about every twenty-eight to thirty days.

THE INFLUENCE OF THE MEDICAL PROFESSION ON THE SOCIAL EVIL.

Prostitution has existed practically since the world began, and it is highly probable that its termination and that of the world will coincide. A subject more wrangled over, more discussed, and more utterly defiant of solution can not be imagined. It has vexed reformers and philanthropists ever since the world contained such men. It has had its defenders, too. Idealists and dreamers have theoretically trimmed it, and restricted it, and controlled it; lawmakers have practically outlawed it and then "regulated" it. And what has been the result of it all? Absolutely nothing. It continues, it flourishes, it even grows. Driven from its open and mercantile position by spasmodic and evanescent "revival" and "reform" movements, it but spreads in secret places only to break forth with renewed life when the reformer shall have grown tired of his hopeless task.

Are we, then, to accept the thing as necessary and consequently leave it to itself to grow and flourish unrestrained? Surely not. Necessary it may be, since evil and depravity seem necessities, but necessary in no other way; and as we fight other evils surely this too must be fought. How, then, shall this fight be carried on? Religion doubtless has aided and will aid, and the better education of the masses will do still more. From the law little can be expected; it may keep the evil from being publicly offensive, but, if it prohibits, it but scatters and does not care; if it "regulates" and "protects," it but encourages. There is one class of men whose power in this question is greater than that of all others—the physicians. Their relations with their patients and their influence over them enable them to be powerful either for good or for evil as they please, and, if not actively for good, then are they passively for evil. But shall we make of each doctor a preacher and a missionary? How also can he do this good?

There is a well-founded idea in the popular mind, especially in the minds of young men, and one too often used as an excuse for debauchery, that coitus is necessary for health. Often, too, this idea is not only allowed by physicians to exist, but even encouraged, if not actively, at least passively. That coitus is not necessary for health is proved beyond doubt, not only by the highest medical authorities, but also by every man's powers of observation and common sense. That so erroneous and false an impression as that of the physiological necessity of coitus should prevail constitutes an affront to our professional dignity, and each one of us owes it to the profession and to himself to resent and destroy the imputation of complicity which it conveys.

This, then, is what we as physicians can do to help control the evil: We can collectively and officially declare that sexual indulgence is not necessary for health, and thereby destroy the possibility of the silly excuse so often given for depravity. Better yet, we can, each one, in his practice, use our efforts to destroy an impression so false and yet to the young so dangerous, while we point out the dangers and consequences so often the price of illicit venery.

MINOR PARAGRAPHS.

COMPRESSION OF THE UMBILICAL CORD DURING DELIVERY BY FORCEPS.

Dr. Swayne, the *Lancet* states, has recently again directed attention to the danger to which the child is exposed during delivery by forceps from pressure of the extremities of the blades on the umbilical cord, should it be so situated as to be compressed when the forceps has been applied. In a former communication on the subject Dr. Swayne instanced a hundred and fifty-three cases of forceps delivery. In twenty-three of these the child was either born dead or died soon after delivery; in four out of these twenty-three cases he attributed the death to compression of the cord by the forceps—that is to say, this injurious compression had been noticed in the proportion of once in thirty-eight cases. Since the time when this series of cases was published Dr. Swayne has had seventy-one forceps cases, with ten deaths of infants, and among these ten stillbirths there were two cases in which the child's death was due to pressure of the forceps on the cord. In this second series, then, the accident in question occurred once in thirty-five cases—not very different from the frequency noted in the preceding series. Spiegelberg's estimate of the fœtal mortality in forceps cases is seventeen per cent. It certainly seems to be the fact, as Dr. Swayne says, that this particular danger—compression of the umbilical cord by the forceps—has not received perhaps so much attention as it deserves.

THE MICROBES OF SCORBUTIC GINGIVITIS.

A recent number of *La Médecine moderne* contains the result of Babès's latest experiments in this direction. The studies were made in three typical cases of scorbutus. Small portions of tissue from the gums, also specimens of blood, were submitted to microscopical and histological examination. There was a diminution of the red globules, with marked leucocytosis. The microscope revealed a characteristic bacillus, elongated, thin, undulating, and forming thick masses. In the tissue the same colonies existed to such an extent as almost to form a false membrane. In connection with the peculiar bacillus numerous other bacteria were present, particularly a streptococcus. Inoculations of animals with the culture substance produced death with typical lesions of scorbutus. Autopsies and microscopical examinations disclosed the characteristic bacillus in great numbers in certain localities, such as the lungs and their capillaries, the tissue of the gums, and the viscera. They were not found in the hæmorrhagic effusions. The cultivation of the bacteria presented great difficulties on account of the presence of the streptococcus. It was found that an injection of the cultivation of streptococcus alone did not produce the typical disease, but with the suspected material from the scorbutic gingivitis death resulted from hæmorrhagic disease. Babès has not yet finished his experiments, but he is under the impression that the bacillus is one peculiar to the buccal region, and that in consequence of a depression in the general health these bacteria take on active changes producing the typical lesions. Again, it might be possible that the gingivitis was due to the presence of the streptococcus, and the general scorbutic symptoms to an invasion of the suspected bacillus through the mucous membrane.

THE PROGNOSTIC VALUE OF CREASOTE IN TUBERCULOSIS.

M. Burlureaux (*Lyon médical*) concludes from an extended observation that creasote is of greater diagnostic value than tuberculin. He has found that where patients can not tolerate creasote in never so small a dose they are usually beyond hope, but where they can support large doses their chances are good for complete cure. Where the drug is not tolerated the phenomena are very marked; directly after the injection the temperature begins to rise and increases for several hours, after which chilly sensations occur with a drop of the temperature to subnormal. All the other symptoms of poisoning with creasote are present. If the drug is borne no unpleasant features develop, but all the symptoms, such as fever, sweating, and so forth, of tuberculosis disappear, and the patients at once begin to improve. Intolerance of the medicament is the test of depreciation of the organism and deterioration of the vital powers.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 13, 1894:

DISEASES.	Week ending Mar. 6.		Week ending Mar. 13.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	0	0
Typhoid fever	5	3	11	5
Scarlet fever	184	15	129	18
Cerebro-spinal meningitis	0	2	0	0
Measles	478	27	387	27
Diphtheria	203	52	167	44
Small-pox	23	3	23	3

The Paris Medical Faculty and the Anarchists.—"We are pleased to note in the pages of a contemporary," says the *Lancet*, "a refutation of the ridiculous statement lately published respecting the attitude of the medical faculty in Paris toward the convict Vaillant. It was suggested that the body of the dead anarchist was buried, and, not as usual, conveyed to the dissecting room, because of a discreet desire on the part of our French *confrères* to avoid incurring the possible resentment of his sympathizers. This absurd insinuation has been cancelled by a later statement, which we are assured gives the true version of what occurred. Dr. Brouardel, who represented the profession, had not received timely notice of the execution, and consequently was not prepared to accept and make the preliminary examination of the body customary in the Paris school at the hour appointed. We are thankful for this later explanation. The disgraceful weakness implied in the *canard* at first circulated was certainly unworthy of any civilized community, and must have caused a feeling of painful surprise among members of the profession in this country. Whatever may be said as to the disputed question of capital punishment in this case, the determined attitude of the French Government in dealing with such outrages as that of the miserable bomb-thrower deserves, and, we trust, will obtain, the firm and undoubting support of every patriotic citizen."

The Harvard Medical School.—This school is the recipient of a bequest, valued at $50,000, under the will of the late Rev. Charles Moseley, of Newburyport.

Bellevue Hospital.—Dr. William P. Northrup was recently elected by the faculty of Bellevue Hospital Medical College to be adjunct professor of diseases of children.

The Ohio Medical University held its commencement exercises on the 13th inst. in Columbus.

The Alumni Association of the College of Pharmacy of the City of New York.—At a meeting held on Wednesday evening, the 14th inst., Professor H. H. Rusby gave a lecture entitled The Observations of a Pharmacognosist in England.

The Medico-legal Society.—At the last meeting, on Wednesday evening, the 14th inst., Judge L. A. Emery, of the Supreme Court of Maine, was to read a paper entitled Medical Witnesses; and Dr. A. E. Osborne, of California, one entitled People who Drop out of Sight.

The Bill for the Relief of Acting Assistant Surgeons in the Army, now before Congress, applies, we are informed, to those who were appointed after the close of the late war.

Change of Address.—Dr. A. J. McCosh, to No. 22 East Fifty-sixth Street.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 25 to March 10, 1894:*

Irwin, Bernard J. D., Colonel and Assistant Surgeon General, is granted leave of absence for twenty days, to take effect upon the adjournment of the Eleventh International Medical Congress, to be held at Rome, Italy, March 29 to April 5, 1894.

A board of medical officers, to consist of Corson, Joseph K., Major and Surgeon; Reed, Walter, Major and Surgeon; and Cabell, Julian M., Captain and Assistant Surgeon, is by direction of the Secretary of War appointed to meet at the call of the president thereof at the Army Medical Museum Building in Washington for the examination of Wales, Philip G., First Lieutenant and Assistant Surgeon, to determine his fitness for promotion. Lieutenant Wales will report in person to the president of the board at such time as he may designate.

Beall, George T., Captain and Medical Storekeeper. By direction of the President his retirement from active service on the 25th of February, 1894, by operation of law under the provisions of the act of Congress approved June 30, 1882, is announced.

Robertson, Reuben L., Captain and Assistant Surgeon. The leave of absence granted is extended one month.

Brooke, John, Major and Surgeon, is retired from active service, February 22, 1894.

Heyl, Ashton B., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Niobrara, Nebraska, and ordered to Columbus Barracks, Ohio, for duty at that depot, on the arrival of Bratton, Thomas S., First Lieutenant and Assistant Surgeon, at Fort Niobrara, Nebraska.

Ball, R. B., Captain and Assistant Surgeon, Fort Monroe, Virginia, is hereby granted leave of absence for one month.

Johnson, R. W., Captain and Assistant Surgeon, will proceed to Fort Monroe, Virginia, for temporary duty during the absence on leave of Captain R. B. Ball, Assistant Surgeon. Upon the return of the latter from leave, Captain Johnson will return to his station, Washington Barracks, District of Columbia.

Willcox, Charles, First Lieutenant and Assistant Surgeon, is relieved from temporary duty at Boisé Barracks, Idaho, and ordered to return to his proper station, Presidio of San Francisco, Cal. Par. 7, S. O. 54, Headquarters of the Army, A. G. O., March 5, 1894.

Wilcox, Timothy E., Major and Surgeon, is granted leave of absence for one month.

Hall, John D., Major and Surgeon. The leave of absence granted is extended one month.

Raymond, Henry I., Captain and Assistant Surgeon, is granted leave of absence for four months, to take effect on or about August 10, 1894.

Hoff, John Van R., Major and Surgeon, is hereby assigned to the charge of the office and duties of the Medical Director, Headquarters Department of the East, during the temporary absence of Smith, Joseph R., Colonel and Assistant Surgeon General, Medical Director of the Department.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending March 10, 1894:*

Olcott, F. W., Passed Assistant Surgeon. Detached from the Naval Hospital, New York, and ordered to the Richmond.

White, S. S., Passed Assistant Surgeon. Detached from the Richmond and ordered to the Naval Academy.

Curtis, L. W., Passed Assistant Surgeon. Detached from the Naval Academy, Annapolis, and to wait orders.

Lumsden, G. T., Passed Assistant Surgeon. Detached from the Kearsarge and to wait orders.

Jones, W. H., Medical Inspector. Ordered before the Retiring Board.

Riggs, C. E., Assistant Surgeon. Detached from the Naval Hospital, Mare Island, California, and ordered to the Naval Laboratory and Department of Instruction, New York.

Bertolette, D. N., Surgeon, and Moore, J. M., Assistant Surgeon. Ordered to the Atlanta.

Page, J. E., Assistant Surgeon. Ordered to the examination preliminary to promotion.

Society Meetings for the Coming Week:

Monday, *March 19th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society.

Tuesday, *March 20th:* Florida Medical Association (first day—Tampa); New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Society of the County of Kings, N. Y.; Baltimore Academy of Medicine.

Wednesday, *March 21st:* Florida Medical Association (second day); New York Academy of Medicine (Section in Public Health, Hygiene, and Vital Statistics); Harlem Medical Association of the City of New York; Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York; Medical Society of the County of Allegany, N. Y. (quarterly); New Jersey Academy of Medicine (Newark).

Thursday, *March 22d:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia.

Friday, *March 23d:* New York Clinical Society (private); New York Society of German Physicians; Yorkville Medical Association (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *March 24th:* New York Medical and Surgical Society (private).

Letters to the Editor.

A CASE OF DIPHTHERIA PRECEDED BY UNUSUAL SYMPTOMS.

Depew, New York, *February 23, 1894.*

To the Editor of the New York Medical Journal:

Sir: I was called to see R. McL., aged seventeen months, on Monday, January 29, 1894, his illness dating from Friday, January 26th, and found him suffering from an attack of acute tonsillitis. Temperature, 104·6°; pulse, 140. Physical examination failed to elicit any pathological condition in the lungs. In the evening, under routine treatment, the temperature had dropped to 99° and the pulse to 100. I told the parents it would be unnecessary to call again as he would be better in the morning, advising them as to the subsequent care necessary in order to prevent a relapse.

In the morning, as stated to me by the parents, he was so well that he was crying to get up and be dressed and allowed to play around the floor and run out into the cold, with the result that when called in the evening I found a temperature of 105° and a pulse of 150; respirations, 50. Every symptom of an extension into the bronchial tubes and a beginning of broncho-pneumonia.

Treatment was at once instituted, and the following days up to Friday showed some little improvement in his condition, the temperature ranging from 102·6° to 103·2° F.

Friday morning his temperature was 104° and there was great difficulty in respiration, the bronchial tubes being filled with mucus, large bubbling râles being distinguishable at a distance of fifteen feet. I administered an emetic—turpeth mineral—with the result that nearly ten ounces of viscid mucus was vomited. The respirations were now much easier and the child sank into a quiet sleep.

In the afternoon I found the temperature still high, the skin hot and dry. Cold sponging and alcohol baths having proved inefficient in the reduction of the temperature, I determined to reduce it by inducing a free diaphoresis.

I communicated my wishes to the mother, who was holding the child, at the time presenting a good appearance, eyes bright and cheeks red. She, to assist me, laid the child down, and after she had it comfortably fixed remarked that he was sweating. This did not occupy three minutes' time. I hastened to him and found him sweating, true enough, but a sweat of collapse, cold from head to foot, pulse imperceptible. I immediately stimulated and gave a hot bath, wrapped him in hot blankets, and stimulated the heart's action by a hypodermic injection of nitroglycerin; he was so low I thought it impossible to hold him until his father arrived.

In the evening he revived a little; the pulse was now perceptible, 200; respirations, 90; but it seemed impossible that he could live the night through. On the following day the condition was hardly changed—pulse 200, feeble and thready; respirations, 86. On Sunday there was a slight improvement—pulse, 160; respirations, 78, and temperature, 101·4°.

On Monday morning, on examination of the throat, I found the tonsils, the anterior pillars of the fauces, and the pharynx covered by a membrane, coalescent and adherent—the case had developed into diphtheria. A little heroism was necessary here, and I pushed the stimulation to the verge of excess. I administered a teaspoonful of brandy every hour in a little milk, and gave the following prescriptions along with it:

℞ Potas. chlor................ gr. xxiv;
Tinct. ferri chlo............. ʒjss.;
Glycerin.................... ℥j;
Aquæ.............. q. s. ad ℥ij.
M. Sig.: A teaspoonful every hour.
And ℞ Quin. sulph................ gr. xxxij;
Ac. sulph. dil............... ʒj;
Tinct. digitalis.............. ♏xvj;
Aquæ.................... ad ℥ij.
M. Sig.: A teaspoonful every hour.

The throat was sprayed every third hour with a seventy-five-per-cent. solution of peroxide of hydrogen, and the nose with a twenty-per cent. solution.

I administered also every third hour two grains of salol, and imagine I owe much to this drug for the child's life, by its antagonizing the poison swallowed every few minutes by the little sufferer.

On Tuesday the throat symptoms were the same, the respirations still very rapid, 68 to the minute; pulse, 150; temperature, 101°.

On Wednesday there was no amelioration of the throat symptoms. The peroxide proving ineffectual to dissolve the membrane, to two ounces of a fifty-per-cent. solution of peroxide I added about ten grains of Fairchild's pepsin, and on the following day, after frequent spraying, the throat was nearly free from membrane.

On Saturday, February 10th, the child was convalescent, and is now nearly recovered.

The reason for the writing of this article is to elicit from the profession opinions as to the true nature of the disease, and to obtain some hypothesis as to its true pathology.

Certainly it is unusual for a case of capillary bronchitis to be complicated by diphtheria.

For a *résumé*: The temperature, pulse, and respirations, together with the physical examination, which revealed scattered areas of dullness in both lungs, with subcrepitant râles and later large bubbling râles, denoted a broncho-pneumonia, but strangely it was not associated with much coughing.

The collapse of Friday was a toxæmia and not the asphyxia usually attendant on broncho-pneumonia, and, as I have remarked before, it is very unusual to have the disease complicated by diphtheria.

I have been sometimes tempted to believe that the case was one of diphtheritic laryngitis with an extension upward, but this is unsatisfactory and does not account for the lung symptoms, the subcrepitant and large bubbling râles. All symptoms of a diphtheritic laryngitis were wanting.

Is broncho-pneumonia ever accompanied by the formation of a false membrane, non-diphtheritic, coalescent, and adherent, situated upon a deeply injected mucosa? And, if so, would it be accompanied by swelling and tenderness of the cervical glands?

I should be much pleased to hear from some members of the profession of cases similar and explanatory as to the nature of the case here presented. F. H. Field, M. D.

CHLOROFORM IN CORYZA.

219 S. Seventeenth Street, Philadelphia, *March 12, 1894.*

To the Editor of the New York Medical Journal:

Sir: In the *Journal* of the 10th inst. I notice a paragraph in which Dr. J. Gerard recommends the use of inhalations of chloroform in arresting the extension of coryza to the bronchial tubes.

If you will kindly refer to the first edition of Dr. J. Solis-Cohen's book on *Diseases of the Throat*, published in New York, 1872, page 256, you will find chloroform recommended, with its advantages and its risks expressed as follows:

"The inhalation of chloroform to the induction of anæsthesia, administered after the patient has been put into bed, will often be found adequate to abort a cold by its relaxing influence upon the structures, which are in a state of tension. Personal experience has proved the value of this remedy in a number of instances, especially in such as were thought too far advanced to promise success in the abortive treatment by opium or alcohol. But while the use of the anæsthetic is acknowledged to be efficient for the purpose, the responsibility of a resort to it must rest upon the physician prescribing it. It is in some respects a dangerous remedy, and one to be employed in skillful and careful hands only, and therefore not to be generally recommended. But such happy effects have followed its use in the author's hands in some cases attended by intense pain and tension in the frontal and maxillary region, and presenting distressful obstruction to breathing, that an acknowledgment of its value is not to be withheld. The cases alluded to would have required larger doses of narcotics to control their symptoms than it was deemed desirable to prescribe; and the fact was remembered that the administration of chloroform for the relief of pain already existing is by no means attended with anything like the same danger as when it is given for the prevention of pain. An examination into the statistics of deaths from chloroform will show that this result rarely happens when it is judiciously administered for the relief of pain, as in neuralgia, parturition, and operations begun without resort to anæsthesia." Solomon Solis-Cohen, M. D.

SOME SERIOUS OVERSIGHTS.

Berkshire, Mass., *March 1, 1894.*

To the Editor of the New York Medical Journal:

Sir: The great development of medical science in all directions during the present generation seems to have cultivated a tendency to verbosity in medical writers which is prejudicial to the general advancement of knowledge. Simplicity in scientific writing is very desirable on every account—it is eminently conducive to perspicuity, "the first requisite of style."

In this respect a certain text-book is disappointing. The list of its contributors contains the names of men who are eminent in our profession; but these writers have obscured their essays with too complicated constructions, making it needlessly laborious to get at their meaning. If they had simplified their style two volumes of much smaller size than these bulky ones might have contained all they have given us.

There is a certain disadvantage in the work being made up by a number of scholarly writers, who all endeavor to maintain a high standard of composition in view of the competition —and overdo it. Whereas, had it been the work of a single author, he would have aimed at brevity and presented the subjects in the manner most readily assimilated by the student.

But it is not only in style that the work is somewhat disappointing. I subscribed for it, hoping to get a text-book for easy reference, that would contain the most advanced pathology and therapeutics. But in several of the chapters that I have examined there is a notable deficiency in this respect.

Pneumonia the author defines as "an infectious inflammation, with exudation from the blood-vessels and the growth of pathogenic bacteria," and makes no distinction between simple and infectious lobar pneumonia. He says "the mortality has gradually increased from ten per cent. in the first decade (1822 to 1832) to twenty-eight in the present decade," and gives several reasons for the increase, but makes no reference to diphtheria as the essence of infectious pneumonia and the cause of increased mortality. Single uncomplicated lobar pneumonia, before the appearance of diphtheria in this country in 1857, was never fatal under good care, and infection in any case was unknown. In regard to therapeutics, the eminently successful treatment of simple pneumonia with carbonate of ammonium, under which its period was shorter than by any other treatment, is not mentioned by this author.

In the consideration of the treatment of acute dysentery, no mention is made of what Bartholow, in his *Materia Medica and Therapeutics*, says is the best method, "the most efficient treatment"—that by sulphate of magnesium in frequently repeated doses—although this method has been advocated since 1852, and was somewhat widely employed before Bartholow indorsed it. The London *Lancet* several years ago published a report from an East India surgeon, of ninety-five cases treated in this way in India by him in one season, with rapid cure, without a death—except in one case admitted to his hospital in an advanced stage. The writer reported that he had adopted the treatment on Bartholow's suggestion.

In puerperal convulsions it has been known for twenty years that veratrum viride, in doses large enough to reduce the pulse below the normal rate, arrests the paroxysms, and by all experience has a marked superiority to all other methods. It has been published in New York and in Canada, if not elsewhere; but no mention is made of it in this book.

In the chapter on cholera, no mention is made of the use of calomel, as the main reliance in the treatment during the first stage; although by all experience in two of the epidemics it was the chief reliance. "The calomel treatment was pursued in the four cholera hospitals of New York and Brooklyn in 1866, with about the same results in all. It met with favor in Europe and in the United States army. In 1854, Dr. Hutchison, who treated a hundred and forty-four cases in the Brooklyn hospital, made no attempt to check the diarrhœa, but gave a grain of calomel every hour; and all those who entered the hospital in the first stage recovered." This was the common experience.

The chapter on diphtheria fails to notice the important fact that the false membrane is not in all cases visible in the throat —a very serious consideration, in view of diagnosis and treatment. This was an observation made some years ago by the late Dr. W. P. Seymour, of Troy, N. Y., and fully set forth in the *New York Medical Journal* in 1889. It was there stated that "diphtheria is to be regarded as a constitutional disease, manifesting itself upon any mucous membrane, and frequently exhibiting no exudation membrane on the fauces, while attacking the lungs or other organs; that the diagnosis does not depend upon the presence of a false membrane in the throat."

Whether these important omissions are characteristic of the entire work, I can not say, for I have not yet examined other chapters. For the faults of style, the redundancy of language, I think that the present fashion of bacteriological studies is partly responsible—by their elaborate details, whose value is overrated. For we know that that part of microscopic history has no bearing upon therapeutics, except so far as it aids in the diagnosis of zymotic diseases. William Henry Thayer.

MAUNSELL'S METHOD OF CIRCULAR ENTERORRHAPHY.

55 West Thirty-sixth Street, *March 12, 1894.*

To the Editor of the New York Medical Journal:

Sir: The following extract from a letter recently received by the writer from Professor H. Widenham Maunsell, of London, will interest your readers: "In the discussion of your paper, A Case of Contusion and Rupture of the Ileum, the following remarks occur: 'In addition to Maunsell's method the use of a single row of sutures, either *continuous* or Lembert's interrupted sutures round the outer layer uniting the peritoneal surfaces, would be a great safeguard.'

"*Answer.*—A double line of sutures should *never* be applied in intestinal surgery. It obstructs the circulation too much, interfering with firm plastic peritonitis and in some cases causing gangrene of the inverted portion of gut. A continuous suture should never be applied round the intestine. First, the diameter of the intestine is always varying; second, as the stitches never cut out simultaneously, they would form loops inside the intestine which would be liable to catch or be dragged or torn out by the onward movement of the contents of the bowel." Frederick Holme Wiggin, M. D.

WHO SHOULD TEACH IN OUR MEDICAL COLLEGES?

Cleveland, O., *March 7, 1894.*

To the Editor of the New York Medical Journal:

Sir: It is surprising to note in visiting our medical colleges the number of important chairs filled by foreign instructors who can not express themselves intelligibly in English.

When I attended lectures I met with the misfortune of hearing for ten months a professor in physiology who could not halfway express himself.

Students could not understand him or he the students. He understood his subject, but could not impart it. The all-important thing for medical students is not imported instructors, but good, simple, well-expressed instruction put in English.

It matters not how much a man knows if he has not the key (the English) to unlock his thoughts to the student. The poor student must suffer. The instructor had better know less and be able to impart more.

I met with a medical society not long ago. An able paper was presented by an American. A discussion followed. Previous to the discussion some member had the audacity to call forward a distinguished physiologist (as he called him) to take up the physiology of the subject. After he had completed his talk we could hardly tell whether we had listened to a talk on physiology or upon the weather. This man is an instructor in physiology in a medical college of a hundred and fifty students. It is an imposition for students to have to listen to such a man. Students pay their money and they should demand intelligible instruction. Practitioner.

"SHOULD PHYSICIANS CHARGE EACH OTHER FOR MEDICAL SERVICES?"

February 26, 1894.

To the Editor of the New York Medical Journal:

Sir: I was interested in the quotation you make from the *Medical News* under this heading, because of a recent experience which has, to me at least, a funny side. My daughter, at college in an Ohio town, was attacked with influenza. Informed that Dr. A. was "the best physician," he was promptly summoned, and after two weeks' illness the patient recovered. I wrote to the doctor, who promised to inform me if any serious symptoms presented. On my daughter's return home, a bill was brought to me made out at the regular rates, and also the information, now for the first time received, that the attending physician was a homœopath, a fact not known until he had been in attendance for several days, when the patient could not summon sufficient courage to dismiss him.

What makes the incident somewhat amusing is this: In a presidential address to the State Medical Society, when speaking of "the demands of modern medicine," I used this language: "*Third.* No advance in medical knowledge worth striving for can be attained, if the physician limits the horizon of his vision by erecting the barrier of some exclusive dogma. With the liberal culture here called for, we need not fear that the modern physician will be lured into a pursuit of that ignis fatuus, *similia similibus curantur*, or that the fancied 'potency of dilutions' will charm him into forsaking the mathematical demonstrations of his youthful days. Modern medicine demands that he shall rise above such delusions. Nor is it becoming in the cultured physician to place some catch-word upon his sign with which to dupe the unwary, while at the same time he in serious cases resorts to rational therapeutics, discarding his sugar pellets whose sweetness has won him practice."

And in a recent address I took occasion to quote from Dr. Weir Mitchell the following illustration of the universal good-fellowship among physicians: "From Japan to London you may claim medical attendance for self or wife or child, and find none willing to take a fee. There is something fine in this idea."

Entertaining sentiments such as these touching homœopathy and professional generosity, fancy my feelings when told that my daughter had not only been attended by a homœopath, but that I must foot the bill! To say that I was *mad* is putting the case mildly, but doubtless my homœopathic brother will exclaim, "It serves him right!" Mad Doc.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

Meeting of February 7, 1894.

The President, Dr. Frederick H. Wiggin, in the Chair.

Extreme Rhachitic Deformity.—Dr. Parker Syms presented a case of this kind. C. H., a colored boy, eighteen years of age, had been admitted to the Colored Hospital on February 17, 1890. His family history had been negative. He had been deformed since childhood, but had enjoyed good health. His limbs were very much distorted.

Syphilitic Exostoses.—Dr. Syms also presented a colored man, twenty-eight years of age. He was single, and a laundryman by occupation. He had been admitted to the Colored Hospital on January 8, 1894. His family history had been negative. He had had the ordinary diseases of childhood. The present affection had begun about five years ago with a swelling of the ankle and an aching pain on motion. The following year sores had appeared on the arm, on the back of the neck, and in various other places, and these sores had discharged creamy pus. About a year ago both wrists had begun to swell, and had continued to increase in size up to the time of his admission to the hospital. On admission he had been well nourished and in good condition; the wrists had been very much enlarged, the right wrist being nine inches in circumference. The swelling had been of stony hardness; it had involved both the radius and ulna and had extended upward about four inches. It had been painful to the touch. The lower end of the right tibia had also been enlarged, so that it had measured ten inches in circumference. The shaft of the tibia in the middle third had been nodulated, and on the left leg there had been some swelling and nodulation over the middle third.

Dr. I. S. Haynes said that in the dissecting room it was not uncommon to find bones presenting similar deformities, especially in the case of the tibia, radius, and ulna; and on section their structure was observed to be very dense, and the medullary canal almost or entirely obliterated.

Submucous Fibroma of the Uterine Body; Enucleated without Morcellation.—Dr. W. Evelyn Porter presented such a specimen. The tumor measured fourteen and a half by eleven and a half inches in circumference. The patient, forty-three years of age, had been married twenty-three years, and had had seven children, the last five years ago. Labor in each instance had been normal. Menstruation prior to two years ago had been regular and unaccompanied by pain. During the past two years she had suffered from gradually increasing menorrhagia, the periods at times lasting from six to fourteen days, accompanied by more or less pelvic distress and sense of weight. She had been unaware of the existence of a tumor until a month before, when she had been examined by her family physician. When first seen by the speaker she had been extremely anæmic and weak, although fairly well nourished. Examination had revealed a uterus considerably enlarged, irregular in outline, with a mass of about the size of an orange protruding from the cervix. Examination of this mass had caused quite profuse hæmorrhage. Upon admission to the New York Cancer Hospital she had been prepared for operation, and after consultation with Dr. Outerbridge and Dr. Coe it had been decided to remove as much as possible of the growth *per vaginam.* When she was examined under ether anæsthesia there had appeared to be two separate masses, the smaller one extending into the vagina, and the other well up into the uterine cavity. The lower one had seemed to be attached by a broad pedicle to the left side of the uterus. It had been held firmly and drawn down with heavy forceps, while the very dense adhesions to the uterine wall were being separated. It had soon been discovered that the mass was continuous with the larger one above, and further dissection had shown that what had been supposed to be the pedicle on the left side had been part of the growth adherent to the uterine wall. This had been freed by careful dissection with the finger and scissors. No large vessels had been found. The entire tumor had finally been enucleated in this manner without injury to the uterine wall and removed through the vagina, a few bleeding points had been ligated, and the uterus, which had been inverted, had been reduced and its cavity packed with iodoform gauze. Recovery from the anæsthesia had been prompt, there had been no hæmorrhage, and the gauze had been removed on the following day. Quinine and ergot had been given to favor involution. The patient was at present convalescing, and would in all probability completely recover.

Ovarian Cyst; Cœliotomy; Recovery.—Dr. Porter also reported such a case. L. A. S., twenty-three years of age, married two years and a half. Family history negative. She had had two children and no miscarriages. Five years ago her health had been excellent. At about that time she had begun to suffer with severe lumbar pain and dysmenorrhœa. From that time on menstruation had become more and more profuse, lasting from ten to fourteen days. Nine months ago she had consulted a physician who had told her that she had no ovarian disease, but that she had "inflammation of the womb" which could be cured by local applications. She had been under treatment for more than six months, during which time she had steadily grown worse. When first seen by the speaker, on December 13th, she had been much emaciated and anæmic, and there had been a soft, fluctuating tumor of about the size of a child's head to the right of the uterus. A small mass could also be felt on the left side. The uterus itself had been normal. Operation had been advised, and after improving her general condition somewhat this operation had been performed on January 6, 1893. The tumor had been found to be a thin-walled ovarian cyst, and it had been removed without difficulty. The opposite ovary had been cystic and had also been removed. Recovery from the operation had been prompt, and the patient was sitting up at the end of the second week. At present she was entirely relieved of the pain, and was rapidly gaining in health. The case was of interest from the fact that the extreme degree of fluctuation and the very thin walls of the cyst had rendered the diagnosis difficult.

Symphysiotomy.—Dr. J. C. Edgar presented two patients upon whom he had performed this operation. The first patient had been operated upon ten months and a half ago. She was a primipara, in good general condition. When first seen she had been in labor forty-eight hours and the membranes had been ruptured artificially five hours before. There had been a vertex presentation, with the sagittal suture transverse in the pelvis. The diagonal conjugate diameter had measured four inches, from which it had been estimated that the true conjugate was three inches and a quarter. An attempt had been made to engage the head by suprapubic pressure combined with internal manipulation. This being found impossible, an axis-traction forceps had been applied and moderate traction made, but the head had not engaged. While traction was being made meconium had appeared in the vagina. The question of version or symphysiotomy had then come up. Symphysiotomy had been elected as giving the child a better chance for its life. It had been performed according to the usual manner—the parts had been shaved and cleaned as for a laparotomy, the patient had been placed in the dorsal position, and a male sound had been passed into the bladder and the urethra held over to the left side. An incision had been made directly upon the pubes and the symphysis had been found distinctly to the left of the median line. Section of the joint had been made with a curved bistoury. No hæmorrhage of importance had occurred. The trochanters had been supported laterally by the hands of an assistant. Immediately on cutting through the joint and subpubic ligament there had been a separation of an inch and a quarter by actual measurement, and this had probably been still further increased during the subsequent version. Direct podalic version had been performed, and the child had been immediately extracted. It had been asphyxiated, but had been resuscitated, and was now alive. Silk sutures had been introduced, two including the fibrous tissues over the joint. No drainage had been used. Care had been taken that the bladder and urethra were not included between the bones. Strips of rubber adhesive plaster and a tight bandage had been applied around the pelvis. The highest temperature had been 100·8° and the highest pulse 100. She had been kept in bed twenty-eight days, and a binder had been kept on for five weeks. The child had been a male and had weighed seven pounds. The biparietal diameter had been three inches and a half, and the true conjugate diameter of the pelvis three inches and a quarter. This had been the sixth symphysiotomy done in New York. There was some motion still in the joint, but it was perceptible only when the patient stood first on one foot and then on the other and swayed from side to side.

The second patient was a primipara, nineteen years of age, who had been operated upon on November 8, 1893. She had been in labor for fourteen hours when first seen, and the head had not engaged. The true conjugate had measured three inches and a quarter. In this case the os had only admitted two fingers; hence, after etherization, the os had been fully dilated by manual force, and then internal direct version practiced, followed by immediate manual extraction of the child. The child had weighed seven pounds and a half, and the biparietal diameter had been three inches and a half. The incision had been made in the same way as in the first case, except that it had been about half as long—an inch and a half. There had been very profuse venous hæmorrhage after section of the joint in this case, which had required to be controlled by iodoform gauze packing. Silk sutures had been used—three, including the fibrous tissues over the joint, and in addition to rubber plaster a plaster-of-Paris bandage had been placed around the pelvis, which had been replaced by another in two weeks. It had been rather more cleanly than the dressing used in the first case. In this case the first stage had been fourteen hours, the second stage twenty-five minutes, and the third stage ten minutes. Her pulse had been 110 at the completion of the operation. There had been no rise of temperature over 100° F. until the eighth day, when there had been a chill and the temperature had risen to 104° F. Examination had shown that the plaster bandage had been applied so tightly that it had caused contraction of the lower segment of the uterus and had thus interfered with drainage. The uterus had been washed and curetted, and an iodoform-gauze tampon introduced. The temperature had immediately fallen and remained normal thereafter, hence the temperature had probably been due to self-infection. She had been kept in bed for four weeks and had then been allowed to get up.

Dr. R. C. M. Page asked if there might not have been slight motion at the symphysis independently of such an operation?

Dr. Edgar replied that he had examined a number of women in hospitals and had found that there was such motion before confinement. This last case had been the thirtieth symphysiotomy in the United States. He had done the operation two weeks before in a case of justo-minor pelvis. Even with the symphysiotomy and the consequent separation of bone in this last case the child had been extracted with the utmost difficulty on account of the contracted transverse diameter, and the version had caused a rent in the cervix extending up into the left broad ligament.

Dr. Murray, Dr. Goldthwaite, and Dr. Barrows were appointed a committee to examine these cases of symphysiotomy and report on the patients' condition.

Dr. Goldthwaite said that he had observed almost as much motion in women pregnant at the eighth month as was to be found in these cases. He thought it was remarkable that the operation of symphysiotomy had been so long unrecognized by the profession.

Dr. Barrows said this was the fifth case of symphysiotomy he had examined, and there was much less motion here than in the others. In the first cases the patients had been permitted to get up on the twentieth to the thirtieth day, and he thought at the time that the greater motion in them had been due to their early getting up, but this theory has been upset by these two cases just presented in which the stay in bed had been about the same.

Dr. R. A. Murray reported that there was very little motion in either patient, and that it in no way interfered with their going about. He had now seen three symphysiotomies and six or seven patients after the operation. In the cases under discussion the children had only weighed about seven pounds—in other words, had been rather small. He thought very much depended on the size of the child compared with the amount of contraction of the pelvis in these cases. In these cases the diameter had been only half an inch less than what would have allowed of the passage of the parietal bone without compression, so that delivery by version might have been possible, although, of course, with very great risk to life. When the child's head was very large and the contraction of the pelvis marked, the separation at the symphysis must be so great as to endanger the integrity of the sacro-iliac synchondrosis, and this might have something to do with the amount of motion found afterward. In a very large proportion of the cases reported the child had been rather small. He believed the operation had a great future before it, for it afforded an opportunity to deliver of a live child in case of a bad presentation. Thus there were many cases of impacted occipito-posterior positions in which this operation would be the means of saving the children. This view distinctly broadened the field of the operation. He was an advocate of the elective Cæsarean section, yet there were many cases in which consent could not be obtained for this operation when symphysiotomy might be done with satisfactory results.

Dr. Edgar said that most German authorities were agreed that if the separation of the joint exceeded an inch and a half there was danger of rupture of the sacro-iliac ligament. Last summer he had seen in the Baudelocque Clinic in Paris some beautiful sections of the pelvis taken from the frozen cadaver, showing a separation of an inch and a half to two inches, and still absolutely no rupture of the sacro-iliac ligaments. He believed that Zweifel and others were of the opinion that if the separation reached two inches there was great danger of rupture of the sacro-iliac ligaments, and that this would prove a serious matter.

Small-pox and Measles.—Dr. S. T. Hubbard referred to a recent experience in the City Hospital. On January 18th a patient with small-pox had been removed from one of the wards in the hospital, and fourteen days later another patient in the same ward, who had come from the same house in the city, had been taken sick. The suffusion of the eyes and the nasal discharge and eruption had pointed toward measles, but it had been thought best to isolate the patient and wait for further developments. The temperature next morning had fallen very considerably and the eruption had been fading, so that there could no longer be any doubt of it being a case of measles. He reported the case simply on account of the doubt as to the diagnosis between small-pox and measles during the first twenty-four hours.

(*To be concluded.*)

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Eighty-eighth Annual Meeting, held in Albany, on Tuesday, Wednesday, and Thursday, February 6, 7, and 8, 1894.

The President, Dr. Herman Bendell, of Albany, in the Chair.

(*Continued from page 312.*)

Disputed Points in Pelvic Surgery.—Dr. Joseph Price, of Philadelphia, opened a discussion on abdominal surgery with a paper thus entitled. He believed that there was still great uncertainty in the profession at large as to what should and what should not be done surgically in the pelvis, notwithstanding the fact that great changes and developments had taken place in this field. The old theory of cellulitis had been exploded by the investigations of Bernutz and Goupil.

There had been much bad reasoning from improper premises concerning pelvic surgery. Tubal and ovarian abscess had been regarded by some writers as a condition which was not especially dangerous, but it was possible to observe the question from two different standpoints—that of immediate danger and that of prolonged ill health with all its accompaniments. Unfavorable opinions concerning the surgery of the pelvis had often been given by so-called conservatives whose experience in this direction was limited and not very successful. Advice from this source was useful only in so far as it deterred incapable and inexperienced men from operating. The complications of pelvic surgery were among the most trying which could be imagined, and called for the highest order of skill and judgment.

Radical treatment of the conditions encountered was preferable in all cases in which it was possible. Too much should not be expected from such operations as were under discussion; they should not be expected to restore all physical functions which had been lost. The extirpation of the entire genital apparatus for the mere suspicion of disease was very rash treatment. Pus in the pelvis was objectionable under any circumstances, and should be got rid of if possible. The chief causes of pelvic suppuration were gonorrhœa and dirty midwifery.

Serious lesions of the abdominal viscera were very frequent concomitants of pelvic disease, and always added greatly to the gravity of the situation. Common sense should be the guide in all these forms of disease as in all other forms of surgery.

Influences affecting the Results of Abdominal Operations.—Dr. J. F. W. Ross, of Toronto, continuing the discussion, remarked that patients who had been subjected to unfavorable influences prior to operations often died, while others equally diseased, but with better surroundings and preparation, recovered. The factor of individual resistance was also of great importance in determining the result of an operation. Those who were enfeebled by constitutional vices, such as tuberculosis, syphilis, etc., were prone to succumb to operations, and the wisdom of operating in such cases was often open to question. The result of operations was also modified by the character of the disease. Simple operations in patients in whom suppuration was absent should rarely result in death; but suppurative cases must often result fatally, however skillful the operation or excellent the surroundings. The result was modified, too, by the surroundings and by the purity of the atmosphere in the patient's immediate neighborhood. Cleanliness was more important than antiseptics of whatever character. It sometimes appeared that a comparatively healthy peritonæum was more susceptible to infective influences after operation than one which was diseased. The routine use of purgatives after operations was not altogether safe practice. Drainage did not always accomplish the results which were expected, and this signified imperfections in the mode of operating. Hæmorrhage should seldom be feared if the operation had been carefully enough performed.

Hæmorrhage after Abdominal Section; its Place in Statistics.—Dr. A. H. Buckmaster, of New York, followed with a paper in which he said he thought that accidents of this character were relatively frequent and that they were seldom reported. Hence the statistics of the subject were not especially reliable. The number of operations which had been done by a gynæcologist was not necessarily a standard for judgment as to the operator's skill. Hæmorrhage of a serious character might occur several days after the performance of operations of not very great magnitude, thrombi which had formed having broken down. Instances of such a character were narrated as following trachelorrhaphy. The speaker had recently lost a patient from secondary hæmorrhage, and had collected accounts of twenty-two cases with similar results. There were few operators of large experience who had not lost one or more patients in that way. The Trendelenburg posture contained an element of danger in the fact that blood lost during an operation gravitated toward the diaphragm and might be overlooked. In some cases the hæmorrhage did not begin until after the person was lowered to the horizontal posture.

Cysts of the Epigastrium.—Dr. D. P. Allen, of Cleveland, narrated the histories of two cases in which he had operated for supposed cyst of the pancreas. In the first case the tumor lay between the stomach and the transverse colon, and examination of its contained fluid revealed nothing but blood. Shortly afterward the patient became pregnant, and just before the termination of pregnancy was seized with vomiting and collapse, and died. A cyst was found in the abdominal cavity containing a large quantity of bloody fluid.

The second case occurred in a boy, and the tumor lay above the stomach. An abdominal incision was made, the tumor was emptied of its contents, and the edges of the incision in the sac were stitched to the edges of the abdominal wound. The fluid in this tumor contained cholesterin and emulsified fat, but no trypsin. The situation of these tumors and their anatomical relations favored the diagnosis of cyst of the pancreas. True cysts of this character had been recorded, though they were rare. Lloyd had reported somewhat similar cases, and considered that they might be due to accumulations in a fold of peritonæum near the diaphragm, known as the bursa omentalis. Beautiful preparations were shown illustrating the wonderful power of absorption of the lymphatics of the diaphragm, and demonstrating the manner by which the tumors under consideration might have arisen.

Dr. Howard Kelly, of Baltimore, in opening the discussion on the previous papers, stated that changes in technique in abdominal surgery were necessarily of frequent occurrence in our struggles for the ideal. Drainage of the abdominal cavity after operation must be regarded as a confession of some error, though it might be unavoidable. He believed there were cases in which pelvic tumors were properly treated by abdominal incision, then incision and drainage of the vagina; but those were the cases in which it would be rash, and probably fatal to the patient, to entirely remove all diseased structures. He favored the free use of cathartics after abdominal operations, but not as a routine practice. If there was danger of sepsis, the purging should be begun before the operation. He was skeptical as to the importance of atmospheric influence concerning the outcome of an operation, if cleanliness had been the rule of practice. Hæmorrhage could be prevented if the pedicle was treated with sufficient care. Transfusion of a salt solution was indicated in cases in which the loss of blood or the shock had been considerable. He had saved life on several occasions by so doing.

Dr. A. G. Gerster, of New York, thought the statements of Dr. Price as to the objectionableness of pus in the pelvis would be conceded by everybody. He objected, however, to the strictures which had been made concerning those who believed that a conservative course in pelvic surgery was wise and correct, and quite agreed with Dr. Kelly that some collections of pus must be removed by drainage rather th n by extirpation of the abscess sac, if we wished to save the patient. The danger from aerial infection had been overestimated, in his judgment, and the personal equation was far more weighty in determining the issue of a given case. The question of purgation should also be treated on a rational rather than a routine basis. If the intestines had become paretic, the time for the use of purgatives had passed.

Dr. Charles P. Noble, of Philadelphia, agreed with Dr. Price that there was still a useful field for drainage. In his opinion, its use did not signify bad work on the part of the gynæcologist, but a bad case to work upon. In such conditions the drainage-tube would certainly be beneficial. The conditions of the case and the state of vitality of the patient would also be the guide as to the propriety of draining pelvic abscesses through the vagina. Of course, all the diseased structures should be removed, if they could be removed with reasonable safety. Hæmorrhage after abdominal operations was always a possibility, and occurred in most men's experience sooner or later, but it must always make one feel somewhat guilty if it did occur.

Dr. Price thought it was fair to assume that the motives of one who practiced abdominal surgery were honest until the contrary was proved, and one should not be too sensitive if his object was to bring the greatest possible relief to suffering women. The mortality in cases accompanied with suppuration increased above the age of forty and diminished under that age. Negro women endured severe abdominal operations better than white ones. We were much indebted to the negro race, for the early operations of Sims had all been upon black women. The risks in abdominal surgery were so great that one who had had little experience as a surgeon should not take them. The speaker's statements in regard to his motive in operating upon the poor had been misunderstood. His motive was as good as anybody's, and he had had the best results in very humble surroundings. Purgation should be practiced before the operation, not after it. Hæmorrhage after operation was usually an expression of bad surgery. The question of drainage was, as had been said, a question of cases, and drainage was almost always needed in dirty cases. If the operation was incomplete the patient would not be cured, and subsequent trouble must be expected. The trouble with the general surgeons was that they applied the principles of general surgery to special work. Opium was objectionable in the speaker's opinion, and he thought that one who could not do without it had much to learn.

Three Cholecystotomies for Gallstones with Recovery, with Remarks on Operative Methods, based on Six Cases.—Dr. W. W. Seymour, of Troy, believed that gall-bladder surgery was at least as meritorious as the treatment of gallstones with Carlsbad water and oil. He narrated the histories of three successful cases in which he had operated. He was not in favor of the removal of the gall bladder if it could be avoided, or of the operation in two stages, which seemed to him to offer no advantages not possessed by the operation in one stage. His incision was an oblique one over the border of the liver, and the abdominal cavity was protected by gauze before incising the gall bladder. If a biliary fistula persisted, Murphy's button might be used in operating upon it. The morbid condition of biliary calculi was now quite generally recognized as a surgical affection, and it was not believed that they could be dissolved by any means yet tried.

Dr. H. Mynter, of Buffalo, believed that the symptoms due to gallstones were now generally recognized, though there were some cases in which the diagnosis was obscure. A case was narrated in which a tumor of the abdomen was supposed to be a distended gall bladder, but was found, on abdominal section, to be a floating kidney.

Dr. Seymour referred to the difficulty in distinguishing a gall bladder enlarged from calculi from one which was the seat of malignant disease, also from malignant disease of the liver. Riedel's statement that the tumor might disappear after the patient had been anæsthetized had been confirmed by the speaker. Bile in the urine, clay-colored stools, and epigastric pain were indications for operation, and an early attempt to relieve the trouble by surgical means was advocated.

Palpation of the Vermiform Appendix.—Dr. G. M. Edebohls, of New York, stated that it was quite as possible to palpate the normal or slightly enlarged appendix as to locate the Falloppian tubes and ovaries. His observations had been made almost entirely upon women, and during the past year he had had a number of opportunities of confirming his diagnosis by operation. Every woman who had been examined by him for pelvic disease had also been examined with reference to the condition of her appendix. The examination had been made with the patient in the dorsal posture, about a foot higher on the table than for the ordinary pelvic examination. The examiner stood on the right of the patient and with two or three fingers, the palmar surface downward, deep pressure was made along the line running from the umbilicus to the anterior superior spinous process of the ilium. The anterior structures of the abdomen being pressed against the posterior abdominal wall, the appendix would be detected between them. If the appendix was healthy it would not be sensitive, while the contrary would be the case if it was diseased. The appendix was usually found at McBurney's point, hence the value of that point in determining a diagnosis. The caput coli seldom obscured a diagnosis, and was seldom filled with fæcal matter, in his experience, as had been usually supposed.

Retroperitoneal Abscess from Duodenal Ulcer.—Dr. L. S. Pilcher, of Brooklyn, reported the case, and believed that diverticula of the duodenum resulting from such abscesses were very rare. He had found but one similar case recorded. The case which the speaker reported had occurred in a young man who had been sent to him to be operated upon for appendicitis. There was a fluctuating tumor in the left epigastric region which ruptured when its removal was attempted and discharged fluid of a puriform character. The tumor sac was a process projecting from the duodenum. Infective peritonitis set in and death resulted on the third day. The trouble had originated in a duodenal ulcer which had gradually enlarged and caused protrusion of the surrounding portions of the duodenum, resulting in the diverticulum or tumor which was found at the operation. The wet preparation was exhibited, also a colored drawing showing the relations of the tumor.

(*To be concluded.*)

Book Notices.

The Cholera Epidemic of 1892 in the Russian Empire. With Notes upon Treatment and Methods of Disinfection in Cholera, and a Short Account of the Conference on Cholera held in St. Petersburg in December, 1892. By Frank Clemow, M. D. Edinburgh, Member of the Epidemiological Society of London, etc. London and New York: Longmans, Green, & Co., 1893. Pp. xii–123. [Price, $1.75.]

The author, a resident of the English Hospital at Cronstadt, has taken advantage of his familiarity with the Russian language to obtain directly from Russian sources the material that would afford a history of the epidemic of 1892. As this epidemic very nearly attained the magnitude of a pandemic, its history is of considerable interest to the student of medicine, because it was through Russia that the disease entered western Europe.

Cholera was introduced into Kaachka, Transcaspian Russia, from Meshed, Persia, about May 31, 1892, and the rapidity with which the disease spread through Russia was due to the number of new railways and to the increase of travel by rail.

A graphic picture is given of the method of living of the inhabitants of the southern Caucasus, and it is easy to see that the polluted air and polluted soil of their houses, as well as the polluted water that is drank, invite the introduction of cholera infection.

The familiar story of dirty towns and unsanitary people is retold in the ravages of this epidemic. The railroads and the Volga steamers assisted in the rapid distribution of infected persons, and in every case the disease was manifestly the result, directly or indirectly, of some pre-existing case.

One of the most important facts insisted upon in this book is that the Russian Government fully realized the threatened danger and made efforts to prevent the disease passing the frontier and to minimize its effects when it had entered the country. The various orders of that Government are detailed, and the measures that were adopted seem to have been well considered.

In the chapter on treatment, the author states that the Russian physicians attached the greatest importance to the use of hot baths, usually of a temperature of 104° F., of twenty minutes' duration, and repeated from three to five times daily. The various modifications of Cantani's method of hypodermoclysis and enteroclysis employed in the different Russian hospitals are described, and reference is made to the various other therapeutic measures found useful.

The sterilization of the dejecta was accomplished by using a solution of carbolic and sulphuric acids, or by boiling the dejecta in special boilers, or by adding twenty per cent. of milk of lime. Wearing apparel was disinfected by means of boiling or steaming. Rooms were disinfected by sponging with a sublimate or carbolized solution. These measures were used in St. Petersburg and some of the larger cities.

A chapter is devoted to the conference on cholera held in December, 1892. This body condemned quarantine as unscientific, and on its recommendation ships from infected ports are to be detained only so long as the process of disinfection requires, sick passengers being removed to the hospital. In view of the investigations made at Hamburg, that showed that the evacuations of persons that had recovered from cholera contained Koch's bacilli in large numbers for some days after the cessation of the choleraic symptoms, it would seem that a decided source of infection has been left uncared for by such an authorization of the distribution of vessels' passengers.

The author refers to the decision of the authorities to hold the Nijni Novgorod Fair notwithstanding the epidemic. As there were 1,953 cases of cholera there during the summer, 891 of which were fatal, with no statistics of the number of persons that attended the fair, the number of visitors who died of cholera, or the number of visitors who acquired cholera while at the fair and carried the infection thence to healthy localities, it would seem that the author is not justified in characterizing as a strikingly mild visitation of the epidemic what seems to us to be a piece of blundering stupidity.

One can not but feel that this book emphasizes the preconceived idea that, if the Russian sanitary authorities carried out the American system of quarantine at the Caspian, Black Sea, and Volga ports, there would be less risk of cholera being introduced into the country, and of the welfare of Europe being jeopardized.

The author's work is a useful contribution to the history of cholera, and the maps and diagrams enhance its value to the profession.

Asiatic Cholera: its History, Pathology, and Modern Treatment. By A. J. Wall, M. D., Fellow of the Royal College of Surgeons of England, and of the Medical Staff of H. M. Indian Army (Retired List). London: H. K. Lewis, 1893. Pp. vi–194.

The author's experience as a surgeon in India is sufficient justification for his volume on a disease that has received much attention during the past two years. He briefly reviews the history of cholera, with special reference to the manner of its dissemination, and then presents the clinical histories of a number of cases, so as to portray the symptoms of the disease.

The chapter on the pathology of cholera presents the various changes produced in the tissues and fluids of the organism.

The various methods of treatment are referred to, but we are surprised that no reference is made to the stimulating effect of hypodermic injections of atropine, strychnine, or nitroglycerin.

The chapter on the ætiology of cholera is quite polemical in character, and the author seeks to refute the theory that the cholera spirillum of Koch is the cause of the disease. But other and able bacteriologists—Sternberg, Welch, Biggs, and Prudden in this country, for example—state that they have never found this spirillum in any disease except cholera, and Dr. Wall's position is certainly at variance with that of the majority of the medical profession.

The author's opinion regarding preventive measures seems to us very sensible. He says of quarantine: "We think it permissible to retain under observation the whole of the persons on board a vessel if there is reason to believe that any of them may be infected, till the risk arising from that infection is over." The chapter on the methods of arresting epidemics of infectious disease is the best in the volume.

The work will prove of interest to any one desiring information on cholera.

A Dictionary of Medical Science: containing a Full Explanation of the Various Subjects and Terms of Anatomy, Physiology, Medical Chemistry, Pharmacy, Pharmacology, Therapeutics, Medicine, Hygiene, Dietetics, Pathology, Bacteriology, Surgery, Ophthalmology, Otology, Laryngology, Dermatology, Gynæcology, Obstetrics, Pædiatrics, Medical Jurisprudence, Dentistry, etc. By Robley Dunglison, M. D., LL. D., late Professor of the Institutes of Medicine and Medical Jurisprudence in the Jefferson Medical College of Philadelphia. Twenty-first Edition, thoroughly revised and greatly enlarged, with the Pronunciation, Accentuation, and Derivation of the Terms, by Richard J. Dunglison, A. M., M. D. Philadelphia: Lea Brothers & Co., 1893. Pp. xi–1181.

It is to be regretted that the editor of this work has made the attempt to compress into one volume such a multitude of headings. The result has been a very large number of terms with insufficient definitions. At the present time a dictionary of the words used in medicine to be of value must be either almost encyclopædic in size or so abridged as to contain only the terms more commonly used. To define intelligibly even the additions to the former editions of this dictionary would require almost as much space as there is in the entire volume. Insufficient definitions would seem to be worse than none. For example, the angle of Cuvier is referred to facial angle, where the angle described is that of Camper, and, as a matter of fact, there are no fewer than seven angles described as facial, differing considerably from each other. Similar instances are found every few pages.

Some of the errors of the previous editions have been perpetuated, as in the use of abductor for adductor in the description of Hunter's canal, and the failure to give any idea as to what an echinococcus may be.

In citing these instances there is no intention to be hypercritical, but simply to show the extreme difficulty of the task the editor imposed upon himself.

The appearance of the book has been immensely improved by an increase in the size of the page, new type, and the omission of the large number of synonyms under each heading given in the former editions.

The Nurse's Dictionary of Medical Terms and Nursing Treatment. Compiled for the Use of Nurses, and containing Descriptions of the Principal Medical and Nursing Terms and Abbreviations, Instruments, Drugs, Diseases, Accidents, Treatments, Physiological Names, Operations, Foods, Appliances, etc., encountered in the Ward or Sick-room. By Honnor Morten. London: The Scientific Press, 1894. Pp. 139. [Price, 2*s*.]

This is a convenient pocket dictionary of terms that a nurse is likely to hear and perhaps to use. The definitions are sufficiently plain to be readily understood by one that does not possess a technical knowledge of medicine. We think that the value of the work would have been increased if the accent had been indicated.

Information for Nurses in Home and Hospital. By Martin W. Curran, Graduate of the Mills Training School, Bellevue Hospital, New York City. Illustrated. New York: J. H. Vail & Co. Pp. xvi–333. [Price, $1.50.]

The author of this volume has collected a considerable amount of information likely to be useful to a trained nurse. It has been his desire to make the volume essentially practical, and its scope is much less extensive than that of most of the manuals on nursing. In his desire to be brief he has occasionally sacrificed clearness, and the proof-reader is often seriously at fault.

Operative Surgery. By Th. Kocher, M. D., Professor at the University and Director of the Surgical Clinic at the Berne University. With One Hundred and Sixty-three Illustrations. New York: William Wood & Co., 1894. Pp. ix–279.

This is a condensed manual of operative surgery. The author describes in a concise and clear manner most of the ordinary surgical operations. The cuts are principally in outline, but easily understood and very accurate. As a guide to one who does little surgery it will be very useful, but to the general operator who seeks a reference book to learn which one of the various methods will best suit a perplexing case, the book will be of no avail. The author has laid down his own choice as the one method of doing everything, and does not trouble himself to describe others. Of course his operations are generally the accepted ones, and may be safely followed, but then we should like to know the others in cases of emergency. Beyond this there is little to be said in criticism of this book. The general make-up is well arranged and in good taste. To the general practitioner, whose time is limited, it will be a most valuable aid.

Chirurgie des voies urinaires. Études cliniques par le Dr. E. Loumeau, Professeur libre de clinique des maladies des voies urinaires, etc. 2me édition. Revue, augmentée et accompagnée de cinq planches hors texte noires et chromolithographiées. Bordeaux: Feret & fils, 1894. Pp. 300.

This volume, as its title indicates, includes a collection of histories of cases relating to the surgery of the urinary passages. The author states that all these histories have been published in various medical journals since 1891. Many of the conditions he reports are rare, all are interesting, and to each he appends commentaries suggested by the facts relating to the case. The volume is a useful contribution to the literature of genito urinary surgery.

The Physiology of Death from Traumatic Fever. A Study in Abdominal Surgery. By John D. Malcolm, M. B., C. M., Fellow of the Royal College of Surgeons of Edinburgh, etc. London: J. & A. Churchill, 1893. Pp. iv–129. [Price, 3*s.* 6*d.*]

This brochure, abstracts of which have appeared in the *Lancet* and in the *Transactions of the Medical Society of London*, is a purely theoretical argument upon the physiological conditions in death from traumatic fever or shock. The author seeks to prove that the blood-vessels are contracted and not dilated or relaxed in this condition, and that this contraction is the cause of destruction of tissues and loss of the vital principles in the blood. While the argument is deep, we see no evidence of any very scientific experiments, and we do not appreciate why it should ever have been published as a book.

Three Introductory Lectures on the Science of Thought. By F. Max Müller. With an Appendix which contains a Correspondence on Thought without Words, between F. Max Müller and Francis Galton, the Duke of Argyll, George J. Romanes, and Others. Chicago: The Open Court Publishing Company, 1893. Pp. vi–3 to 95. [Price, 25 cents.] [*The Religion of Science Library.*]

These lectures, here reproduced, were delivered in 1887 and have since been used as the first portion of the author's well-known work on *The Science of Thought.* This form will probably introduce them to a larger audience.

The Physician's Wife and the Things that Pertain to her Life By Ellen M. Firebaugh. Illustrated with Forty-four Photo-engravings of Sketches from Life. Philadelphia: The F. A. Davis Co., 1894. Pp. xi–186.

To a woman full of sentiment it is hard to be matrimonially allied to a doctor. His time is occupied largely in the care of his patients, and in his leisure hours his mind is full of theories and devices for the relief of human ills. It has been said "the physician's wife does not know what marriage is," and we believe there is much truth in the saying. She must be fertile in her own resources for personal amusement, as she can never depend upon her husband for any social duties. Owing to the imperative demands upon them, doctors are excused from social obligations, and, being excused, they get into the habit of making no effort to fulfill them. Society meetings and scientific gatherings take them from home when patients do not, and, as a rule, the physician's own home circle sees less of him than any other. The wife is the sufferer in all these things, for she can not take part in his work. She is provided with a home and must make the most of it for herself. To one acquainted with these facts the complaints of the author of this little book are so trivial as to be amusing. For a seriously intended book it is the most amusing we ever read.

Suicide and Insanity: a Physiological and Sociological Study. By S. A. K. Strahan, M. D., Barrister-at-Law, Member of the Honorable Society of the Middle Temple, etc. London: Swan, Sonnenschein, & Co., 1893. [Price, $1.75.]

The author states that the prevalence of suicide in England during the summer of 1893 brought the topic of self-destruction prominently before the public; but we doubt if there was any greater increase in suicides in England than elsewhere in the world. In this volume an attempt is made to trace suicide to its source, which the author believes to be cultivation; and to show how large a percentage of what is really avoidable is deliberately propagated by the marrying of the insane, the epileptic, and the criminal.

The first chapter in the volume reviews the history of suicide in early times, and it is noted that Mohammedanism and Zoroastrianism are the only religions that have prohibited suicide. There is nothing in the Old Testament that prohibits it, and the author refers to the several instances wherein it is mentioned without condemnation. If "Thou shalt not kill" refers to suicide, it is only by "construction and implication." Did the author, in his Biblical references, intentionally ignore the suicide of Judas Iscariot?

Self-destroyers are divided into two classes, rational and irrational. In the first the reason of the individual is called upon to decide between death and a continuance of life, and chooses the former. In the second the individual is impelled to destroy his life by an innate craving or instinct, by an uncontrollable impulse, or by the unhealthy reasoning of a disordered intellect.

Rational suicides include religious devotees, those who die to follow friends, those who die to gain notoriety, and those who die that others may gain. The latter class does not seem to us germane to the subject, for a person endeavoring to save another's life is not indulging in a train of reasoning as to whether his own life will or will not be sacrificed; such a question is fundamentally alien to his acts, for the fact that there is a chance that he may save another's life includes the possibility of saving his own. To place Christ in such a class seems extraordinarily erroneous from any extrinsic or intrinsic theological standpoint. This class also includes those who die to escape evil, such as physical suffering, slavery and persecution, punishment, disgrace or dishonor, and poverty. In general, this class the author does not believe to be true suicides, because he believes with the old Greek philosophers: "Live so long as it is agreeable to you; go if you do not wish to suffer; but if you deliberately choose to stay do not complain." Voluntary death is merely one of the eliminative processes of natural selection.

Irrational he considers true suicide. This includes three groups: First, that in which there is mental aberration. Second, that in which the act depends upon an irresistible impulse, and in which there is no mental aberration. Third, that in which a certain predisposition makes it possible for a slight shock, trial, or irritation to awaken the unnatural impulse. Each of these groups is separately considered.

The influence of race, that of climate and season, that of religion, and that of sex and age are discussed in regard to the prevalence of suicide.

The author states that the increase of suicide is largely due to hereditary transmission. We do not believe that this is, as he states, absolutely certain, and not enough is known to prove the soundness of his assertion. On the contrary, the difficulty of proving by statistics the part played by heredity is insurmountable, as he acknowledges. On him, as the assertor, rests the *onus probandi.* We do believe that excessive cultivation of those whom Nature never intended to fill other than an insignificant *rôle*, but whom the chance of the day has surrounded with wealth and its corrupting influences, sooner or later produces degenerative changes that are but expressions of her efforts to eliminate the social fungus. We also believe that the influence of environment in causing mental instability produces a second class that is prone to suicide.

The chapter on suicide and the law is very interesting, and we wish it could be impressed upon the legislators of this State, who are asked to revoke the absurd laws that stultify our intelligence. As the author says, pronouncing suicide a crime has never stayed the hand of a single individual bent on self-destruction. It would be best to no longer consider suicide a crime, and to ignore attempts thereat. The author suggests that better than prohibitory laws would be the enactment that all attempts at suicide, whether successful or not, should be considered in themselves conclusive evidence of dangerous insanity. In the last analysis he agrees with Donne that "self-homicide is not so naturally sin that it may never be otherwise."

The book is a most interesting contribution to the literature of a subject that is of increasing interest to the alienist and the psychologist.

BOOKS, ETC., RECEIVED.

Politzer's Text-book of the Diseases of the Ear and Adjacent Organs. For Students and Practitioners. Translated by Oscar Dodd, M. D., Assistant Surgeon at the Illinois Charitable Eye and Ear Infirmary, etc. Edited by Sir William Dalby, F. R. C. S., M. B. Cantab., Consulting Aural Surgeon to St. George's Hospital. With Three Hundred and Thirty Original Illustrations. Philadelphia: Lea Brothers & Co., 1894. Pp. xi–739. [Price, $5.50.]

Pain, Pleasure, and Æsthetics. An Essay concerning the Psychology of Pain and Pleasure, with Special Reference to Æsthetics. By Henry Rutgers Marshall, M. A. London and New York: Macmillan & Co., 1894. Pp. xxi–364. [Price, $3.]

Tumors Innocent and Malignant. Their Clinical Features and Appropriate Treatment. By J. Bland Sutton, Assistant Surgeon to the Middlesex Hospital, London. With Two Hundred and Fifty Engravings and Nine Plates. Philadelphia: Lea Brothers & Co., 1893. Pp. xvi–511. [Price, $4.50.]

Syphilis in the Innocent (Syphilis Insontium). Clinically and Historically Considered, with a Plan for the Legal Control of the Disease. By L. Duncan Bulkley, A. M., M. D., Physician to the New York Skin and Cancer Hospital, etc., New York: Bailey & Fairchild, 1894. Pp. xvi–398. [Price, $3.50.]

A Manual of Minor Surgery and Bandaging. For the Use of House Surgeons, Dressers, and Junior Practitioners. By Christopher Heath, F. R. C. S., Surgeon to the University College Hospital, etc., London. Tenth Edition. Philadelphia: P. Blakiston, Son, & Co., 1894. Pp. xvi–389. [Price, $2.]

The Year-book of Treatment for 1894. A Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Brothers & Co., 1894. Pp. viii–492.

Clinical Lectures on Pædiatrics, delivered in the Vanderbilt Clinic during the Session of 1892–1893. By A. Jacobi, M. D., Clinical Professor of the Diseases of Children in the College of Physicians and Surgeons of New York, etc. (Stenographic Reports.) New York: Bailey & Fairchild, 1893. Pp. 192. [Reprinted from the *Archives of Pædiatrics.*]

On the Influence of Various Diets upon the Composition of the Urine, and the General Condition of Patients suffering from Chronic Bright's Disease. By W. Hale White, M. D., London. [Reprinted from the *Medico-chirurgical Transactions.*]

The Treatment and Prophylaxis in Insanity. By John Punton, M. D., Kansas City. [Reprinted from the *Alienist and Neurologist.*]

The Modern Crank and Mental Responsibility. By John Punton, M. D. [Reprinted from the *Tri-State Medical Journal.*]

Review of Recent Advances in our Knowledge of the Anatomy and Physiology of the Nervous System. By John Punton, M. D. [Reprinted from the *Kansas City Medical Index.*]

Sarcoma of the Kidney; its Operative Treatment. By Robert Abbe, M. D. [Reprinted from the *Annals of Surgery.*]

Tait's Perineal Flap Operation. By F. Byron Robinson, M. D. [Reprinted from the *Chicago Medical Recorder.*]

Total Extirpation of the Uterus. Cases illustrating Various Indications for and Different Methods of performing the Operation. By George M. Edebohls, M. D. [Reprinted from the *Transactions of the New York Obstetrical Society.*]

The Technique of Total Extirpation of the Fibromatous Uterus. By George M. Edebohls, M. D. [Reprinted from the *American Journal of Obstetrics.*]

The Operative Treatment of Complete Prolapsus Uteri et Vaginæ. By George M. Edebohls, M. D. [Reprinted from the *Journal of Obstetrics.*]

Critique of Microscopic Examination of Specimens removed in Thirty-two Consecutive Laparotomies. By F. Byron Robinson, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Surgical Notes from the Babies' Wards, Post-graduate Hospital, New York City. Robert Abbe, M. D., Attending Surgeon. Reported by Dr. Theodore Dunham. Report 1. [Reprinted from the *Post-graduate.*]

Operation for the Correction of Deformity of the Wrist caused by Shortening of the Radius after Fracture. By E. S. Goodhue, M. D., Cal. [Reprinted from the *Medical Record.*]

Tetanus complicating Vaccinia. By S. W. S. Toms, M. D., L. I. [Reprinted from the *Medical News.*]

Pigmentation of the Whole Surface of the Body, occurring Suddenly during the Treatment of a Case of Psoriasis. Warty Growths upon the Palms and Soles following the Internal Use of Arsenic. By Albert E. Carrier, M. D., Detroit. [Reprinted from the *Medical News.*]

Nitrous Oxide Anæsthesia. A Further Contribution to the Subject of Nitrous Oxide in General Surgery. By T. L. Macdonald, M. D., Washington, D. C. [Reprinted from the *Medical Century.*]

Twenty-fifth Annual Report, By-laws, and List of Members of the New York Physicians' Mutual Aid Association.

Parasites dans le cancer. Par le Dr. Nepveu, Marseilles. [Extrait des *Archives de médecine expérimentale.*]

Hospitals, Dispensaries, and Nursing. Papers and Discussions in the International Congress of Charities, Correction, and Philanthropy, Section III, Chicago, June 12 to 17,18 93. Edited by John S. Billings, M. D., and Henry M. Hurd, M. D. Baltimore: Johns Hopkins Press, 1894. Pp. xiv–718.

New Inventions, etc.

A NEW ALCOHOL LAMP.

By William M. Leszynsky, M. D.

This lamp has been specially constructed with a view to its utilization in the application of cupping glasses. It is made of nickel-plated brass, is five inches long and an inch in diameter, and is provided with a screw-cap and washer for preventing leakage or evaporation. It is hoped that it will materially simplify the process of applying dry cups, thus dispensing with the ancient and dangerous methods still in vogue, such as the use of matches, pouring alcohol into each glass and igniting it, lighting small pieces of paper or absorbent cotton previously saturated with alcohol, and even the safe but frequently inconvenient method by means of alcohol and a sponge probang. All these methods, being for the purpose of producing a vacuum in the glass, will be readily and rapidly subserved by this specially adapted lamp, which may be handled like a torch. On account of its size, shape, and simplicity in construction it may be safely carried in the pocket or in any instrument bag, and used whenever a spirit lamp is required. It is made by E. B. Meyrowitz, of New York.

Miscellany.

Trephining among the Ancient Peruvians.—The January-February number of the *Bulletin of the Johns Hopkins Hospital* contains a paper presented to the Historical Club of the hospital on December 11th by Mr. W J McGee, of the Bureau of American Ethnology, entitled Primitive Trephining, illustrated by the Muñiz Peruvian Collection. This collection, it appears, was made by Dr. Muñiz, the surgeon general of the Peruvian army, and includes nineteen specimens of trephined portions of skulls.

"About half are of interest chiefly," says Mr. McGee, "as indicating the manner in which the operation was performed. Three types of operation are exemplified. In the first type four linear incisions were made in the cranium in parallel pairs intersecting each other at right angles so as to form a rectangular button; the incisions being narrow, v-shaped in cross section, and gradually increasing in depth from ends to center, thus indicating that the instrument was a pointed bit of stone or arrowhead held vertically and operated by reciprocal motion. This suggestion gains strength from the fact that American Indians are known to have produced incisions in bone in this fashion. This type of operation is rude and the resulting traumatism is jagged, each incision extending perhaps half an inch beyond the button at each extremity. There is no indication of the purpose of the operation of this type in any case, and nothing to suggest that if the operation was ante-mortem the individual survived. Aberrant examples of this type exhibit three or more parallel incisions, one example consisting of three approximately parallel incisions in each of the two rectangular sets forming a quadruplicate button or four coincident rectangles of which one remains, the other three being completely removed; and in another example the incisions of the rectangular system are still more numerous, and there are some oblique incisions, nearly four square inches of bone being removed and no fewer than twenty distinct incisions showing about the margin of the aperture.

"In the second type of operation the incision was evidently made also by a rudely pointed instrument, probably of stone, held vertically and moved reciprocally; but as the cutting reached and penetrated the inner table, the locus of incision was moved forward and at the same time the direction of the sawing was changed so as to produce a rudely curved cut and, when two such incisions were made, an irregularly elliptical button. Some examples indicate that this type of operation was completed by scraping or grinding away the jagged surfaces left by the incision.

"The third type of operation was performed largely or wholly by scraping in such manner as to remove the outer table and diploë and reduce the inner table to a feather edge. Some of the examples suggest that the scraping, which may easily have been effected with stone instruments and gives no indications of the use of metal, represents the final part of an operation begun by the curved incision.

"Several specimens show by spicules of reparative growth and by the partial absorption of the outer table and diploë that the patient survived the operation, and hence that the trephining was ante-mortem. One individual appears to have long survived an operation forming a rudely circular aperture about three quarters of an inch in diameter in the posterior portion of the cranium, and probably also for a short time a similar operation involving the metopic suture (which in this case is distinctly preserved). Another individual long survived two operations, probably of the second type, giving apertures nearly an inch in diameter, but apparently died about the time of the completion of a third trephining involving the coronal and sagittal sutures. A third individual long survived, as indicated by the reparative spicules and the complete absorption of outer table and diploë, an operation by scraping giving a rudely circular aperture about an inch in diameter. In none of these cases is the purpose of the operation evident." . . .

"Several examples are exceptionally noteworthy in that they prove the operations to have been surgical. In the first example the cranium shows a depressed fracture of the left temple, such as might have been produced by impact of a slingstone or blow from a spiked club, which are known to have been the weapons used among the ancient Peruvians. An operation essentially of the first type was begun, but only three incomplete incisions were made and the button was not removed when the work was discontinued, probably by reason of the death of the patient. The second example shows marks of a similar fracture in the posterior portion of the left parietal; in this case four incisions of the first type (although one is oblique) were made, and the operation was carried far enough to remove the button, but not the jagged edges resulting from fracture and operation, this individual also apparently dying in the hands of the operator. A third specimen displays a compound fracture involving the left temporal suture; and in this case an operation was performed by scraping, producing an elliptical aperture about five eighths by three quarters of an inch; and there is in addition a simple vertical incision such as those produced in the first type of operation, which apparently represents the first stage of supplementary treatment. This individual also apparently died before the final operation was completed. Another example exhibits a linear fracture fully six inches long, extending from near the center of the occipital across the lower portion of the right parietal and across the temporal, disappearing under the zygomatic arch. The treatment in this case consisted of scraping at several points along the fracture, including a scraped trephining, yielding an aperture of about three eighths of an inch in the occipital bone not far from the termination of the fracture. This operation would appear to have been completed to the satisfaction of the surgeon. Then, as indicated by the condition of the specimen (a mummy in which a considerable part of the scalp is preserved), the scalp was laid open over the occiput and two incisions representing an operation of the first type, together with a minor vertical cut, were partially completed before treatment was finally abandoned, apparently by reason of death. Thus, while it can hardly be said that these four examples demonstrate the ante-mortem date of the operation, since it is just conceivable that they might represent post-mortem exploration, they nevertheless prove that, if ante-mortem, the operation was surgical; and the ante-mortem date of the operation in some cases is proved by examples already noted.

"One of the specimens is of exceptional interest in several ways. The skull is small and thin; the ankylosis of the sutures is so far progressed as to indicate an age of twenty-five or perhaps thirty years; while the development of the teeth indicates an age not exceeding twelve years. In this case the aperture, which is on the right side, is of remarkable size, extending from the frontal within three quarters of an inch of the orbital cavity across the coronal suture nearly to the center of the parietal, its length being fully four inches and the width averaging an inch. The specimen is of interest also in that it was the only one in which a plate is known to have been used, a silver plate having been found in place over the aperture in the mummy case. The presence of the plate, its seat in the skull showing long wear, and the absorption and reparative growth, all indicate that the operation was survived. No wound appears in the vicinity of the trephining, but there is a traumatic depression on the left side of the frontal an inch and a half above the orbital cavity and about the same distance from the center line, apparently due to a blow, such as produced the depressed fractures in other examples, suffered in early life when the bone was soft. Now, while the operation can not directly be traced to this traumatism, it is suggested that this wound produced the abnormal, perhaps epileptic, condition which is indicated by other characters of the skull; and that the enormous trephining represents successive operations designed to relieve this condition. If these inferences be true, it will follow that the operation in this case was not only surgical, but parallel with the non-traumatic trephining of modern practice, thus indicating a considerable advance in medical knowledge and surgical skill."

Painting with Guaiacol and its Absorption by the Skin.—In the *Province médicale* for February 17th there is an article on this subject contributed by M. Guinard and M. Stourbe, in which it is shown that guaiacol is found in the urine of persons who have been painted with this medicament. It is known that guaiacol is found in the urine of those who have inhaled and absorbed its vapors through the lungs, but it has also been seen that the proportion which penetrates in this way is not very large. The author relates the case of a young man on whom he experimented twice. The first time the thigh was painted with thirty grains of guaiacol and then covered; the temperature simply fluctuated between 98·6° and 98·5°, and a considerable proportion of guaiacol was found in the urine. The second experiment was made in the morning after the patient had spent the night in dancing, and probably drinking. He was tired, and experienced the general discomforts consequent upon such dissipation; there was heaviness of the head, and he was particularly sensitive to cold. An excessive indulgence in alcoholic drinks and insufficient rest had given rise to these nervous conditions, which slightly modified the results of the experiment. His temperature was about 97·5°, and after the application of fifteen grains of guaiacol on the left thigh, under the conditions described above, the temperature presented successive changes. In addition to the fall of temperature, the patient felt a sensation of smarting at first, which persisted for about fifteen minutes, and also at the end of the experiment a sensation of heat all through the left leg, with excessive sweating in the same part. Finally, after this experiment, which lasted two hours, a larger proportion of guaiacol was found in the urine.

M. Guinard also relates the cases of five patients who were subjected to applications of guaiacol with or without the envelopment of the parts painted, and draws the following conclusions from these experiments: That guaiacol can penetrate through the epidermis; that this penetration appears to be the result of an absorption of the vapor; that the envelopment of the painted regions, thus keeping the vapor in contact with the skin, increases the proportion of guaiacol in the urine, and exaggerates the sensation of heat which it produces on the extremities and on the hand; finally, that probably in this explanation will be found the cause of the differences existing in the antipyretic effects, according as the painted regions are covered or allowed to remain uncovered.

Compression of the Phrenic Nerve as a Therapeutic Measure.—The *Journal des praticiens* for February 10th contains a letter from its Marseilles correspondent in which its readers are reminded that seven or eight years ago Dr. Bidon conceived the idea of assuaging hysterical spasm of the glottis by exerting digital compression on the phrenic nerve between the heads of the sterno-cleido-mastoid muscle. After that Leloir advised this procedure as a means of checking hiccough. Now M. Bidon suggests it afresh as a remedy for spasm of the glottis in persons suffering with tabes. The following is a summary of a case thus treated: The patient, a man thirty-eight years old, complained of fulminant pains, incontinence of urine, and muscular weakness, and showed Westphall's and the Argyll-Robertson symptoms. Every ten minutes he was attacked with vertigo, weakness in the legs, a half-fainting condition, and a sensation of suffocation. M. Bidon compressed both phrenic nerves with the fingers. The spasm ceased and the difficulty in breathing disappeared, but only provisionally and for a few minutes after the compression. The use of the measure was persevered in, and in eight days the cure was lasting. How, asks the correspondent, is this phenomenon to be interpreted? By a paralyzing action on the diaphragm, or by an inhibitory action on the nervous centers in such manner as to suspend spasm of the constrictor muscles of the glottis, or by direct compression of the laryngeal muscles? He does not attempt to answer the question, but he remarks that the fact is memorable from a clinical point of view.

Expression of the Placenta.—In the *Medical Report* for 1893 of the Society of the Lying-in Hospital of the City of New York (Midwifery Dispensary) Dr. J. W. Markoe describes a modification of the Credé method of dealing with the placenta. He says:

"It is obvious, from the literature upon this subject, that the relation of the axis of the vagina to that of the uterus has been ignored. A few suggest obliterating the flexions in the uterine canal, but none seem to have recognized that the axis of the parturient uterus is nearly at right angles to that of the vagina—a point which, to the writer, seems the cause of all the difficulties which they have encountered. It is not my intention to compare the merits of the different methods, but to suggest a modification applicable to all the methods of expression, which has proved most satisfactory to me in practice and is mechanically correct.

"In some cases, especially in primiparæ, the uterus contracts firmly around the contained placenta and membranes, remaining in this condition until the expulsion of the secundines, while in other cases the uterus rhythmically contracts and relaxes each time, becoming more and more firm; while still in other cases the uterine muscles seem to have expended all their energy in the expulsion of the child, and we have a flaccid organ which will be accompanied by hæmorrhage, if the thrombi in the uterine sinuses have not already formed. In practicing Credé's method of removing the placenta, no fixed time need be set, except that as soon as the relaxation of the uterine fibers has so far disappeared that the uterus remains under the hand as a firm body, then expression may take place at any moment. To accomplish this successfully and with the least discomfort to the patient, three things are necessary: First, the patient must relax the abdominal walls as much as possible. Second, the uterus must be firmly contracted. Third, the axis of the uterine canal must be made to conform to the axis of the vagina. If these three essentials be present and the placenta is not absolutely adherent to the uterine wall, the expulsion can be accomplished with two fingers and but little effort.

"As in all obstetric operations, before proceeding the bladder should be emptied, especially in this manipulation, as a distended bladder forces the uterus upward and prevents the easy handling of the uterus. Then, standing at the side of the patient, her knees being drawn up, with one hand grasp the fundus through the abdominal wall and ascertain the precise direction of the uterine canal. This being known, all that is necessary to bring the axis of the uterus in line with that of the vagina is to gently press the fundus backward toward the promontory of the sacrum, thus throwing the cervical portion of the uterus forward and bringing the uterine axis in line with that of the vagina. The obliteration of this angle reduces the resistance to the minimum, thus diminishing the force requisite to accomplish the expression. The next step is to direct the pressure upon the fundus in the direction of the vagina, care being taken that it be kept well back, in order that the angle may not recur. If this is properly carried out, the placenta is received in the other hand at the vulva."

The Prevention of Cracked Nipples.—The *Lancet's* Paris correspondent says: "The direct relation of mammary abscess occurring during the period of suckling and excoriations of the nipple is now fully admitted. Many mothers object to suckling their infants on account of the dread of this complication. Artificial feeding with its frequent failures is then resorted to, and the child suffers. Antiseptic washing of the nipples has greatly diminished the frequency of abscess of the breast, but cracked nipples continue to be of common occurrence. For the last ten years Professor Pinard has been in the habit of advising nurses as a matter of routine to keep the nipples covered with a compress saturated with a solution of boric acid. This precaution has had the effect of markedly diminishing the frequency of lymphangeitis, but instances of an increase of temperature in young mothers due to microbian infection of the nipples are still numerous. M. Lepage strongly recommends that the nipples should be regularly washed with the following solution: Red iodide of mercury, 10 to 20 centigrammes; spirit of wine, 50 grammes; glycerin, 500 grammes; distilled water, 450 grammes. If after using this for a few days the ulceration disappears, substitute a solution of boric acid. Any crack that may develop is covered with tarlatan moistened with the mercuric solution. The following figures appear to confirm M. Lepage's good opinion of the comparative value of his method. In 331 cases of lying-in women whose breasts were treated by the Pinard method there was an increase of temperature in 67, the corresponding figures in M. Lepage's cases being 23 out of 440. Moreover, the healing of the cracks is said to be expedited and the pain greatly diminished by the mercurial treatment."

The Respiratory Complications of Chicken-pox.—In the *Presse médicale* for February 17th we find a brief summary of a Paris thesis, by Dr. L. Boucheron, in which the author draws attention to accidents affecting the larynx, the bronchi, and the lungs which sometimes supervene in the course of chicken-pox, and impair the renown for benignity enjoyed by this disease. Along with broncho-pneumonia and pleurisy by secondary infection for which chicken-pox prepares the way, it must be admitted that there is a primary disposition on the part of the eruption to attack the mucous membrane of the air-passages. Certain cases show that not only stomatitis but laryngitis, broncho-pneumonia, and perhaps even pleurisy may be of a varicellous nature. The author relates an interesting case of his own—that of a little girl who, already weakened by a preceding attack of whooping-cough, was seized with chicken-pox, characterized by successive eruptions, and died about the twentieth day in consequence of laryngeal spasm. At the autopsy nothing was found to explain the occurrence of the spasm except vesico-pustules, similar to those of the cutaneous eruption, occupying the laryngeal mucous membrane at the level of the arytænoid region and the posterior portion of the vocal cords. This is thought to be the first case of the kind recorded.

The New York Academy of Medicine.—The special order for the meeting of Thursday evening, the 15th inst., was a paper on Greek as the International Language of Physicians and Scholars in General, by Dr. Achilles Rose.

At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 19th inst., Dr. Charles H. May will show a simple combination chart of test-type, also a modified cilia forceps; Dr. Justin B. Barnes will show an adaptation of the Maddox cylinder to the phorometer; and Dr. W. E. Lambert and Dr. W. B. Marple will demonstrate devices for facilitating retinoscopy.

At the next meeting of the Section in General Medicine, on Tuesday evening, the 20th inst., Dr. Adolph Zeh will read a paper on the Dietetic and Therapeutic Management of Typhoid Fever, and Dr. A. R. Bellamy will show a new apparatus for administering the Brand bath.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 29th inst., Dr. Paul F. Mundé will read a paper on Abscess of the Ovary, and Dr. S. Marx one entitled Further Contributions to the Study of Occipito-posterior Positions.

A Fatal Case of Displacement of the Spleen.—At a recent meeting of the Paris *Société de chirurgie*, a report of which appears in the February number of the *Revue de chirurgie*, M. Heurtaux, of Nantes, related the case of a girl, seventeen years old, who had an abdominal tumor accompanied by symptoms comparable to those observed in cases of torsion of the pedicle of an ovarian cyst. M. Heurtaux performed median laparotomy and encountered a tumor which he recognized as the spleen, very much augmented in size, and having undergone a movement of twisting on its pedicle. The capsule was thickened and adherent to the peritonæum and to the neighboring organs. The spleen was removed. The patient died on the third day after the operation, and an autopsy failed to disclose the cause of death, so it was thought that it must have been the shock of the operation. The displacement of the spleen seemed to have been due to the excessive length of its pedicle.

Lectures and Addresses.

THE ACADEMY OF MEDICINE IN RELATION TO PUBLIC HEALTH.

ADDRESS OF THE RETIRING CHAIRMAN OF THE SECTION IN PUBLIC HEALTH, ETC.
Delivered December 19, 1892.

By S. T. ARMSTRONG, M. D., Ph. D.

Before transferring the duties and responsibilities of the chairmanship of the Section in Public Health, Legal Medicine, and Medical and Vital Statistics to my successor, whom you are to elect this evening, it seems appropriate to review the history of the Academy of Medicine in its relation to questions pertaining to public health, for the experience and action of the past serve as guides and precedents for the future, and the complexity of living in large cities affords problems for the sanitarian that should engage the attention and action of this section.

The first anniversary discourse of the academy was delivered on November 10, 1847, by Dr. John W. Francis, who referred to the fact that hygiene, state or political medicine, had long constituted an important branch of medical education on the European continent, and he said that if the members of the academy were the followers of Hippocrates hygiene would receive more attention at home. His words fell on responsive ears, and that the academy then considered it to pertain to its functions to take an active part in questions affecting public health may be judged from the appointment in 1848 of a committee to report upon the comparative value of milk formed from the slop of distilleries as a food. On March 1, 1848, Dr. Augustus K. Gardner, the chairman, presented the report of "the committee of eleven that were to examine into the effects, proximate and remote, upon the general health of the city caused by the numerous distilleries, gas works, slaughter houses, milk establishments, lead manufactories, tanneries, and all other manufactories and establishments that are or may be styled nuisances, from their deleterious effects upon the health; and particularly to report the effect upon the human economy of milk taken from kine tuberculously or otherwise diseased from improper food or confinement in these milk establishments." This report particularly condemned the use of milk from cows that were stall-fed on distillery swill, and it recommended that the public authorities be informed of this conclusion so that they might take such action as they saw fit.

It is not possible to learn from any accessible records what further work in sanitation was inaugurated by the academy, but that there were some fellows interested in hygiene is attested by article six of the third section of the constitution of 1852, that provided for the creation of a number of scientific committees, the seventh of which was that in public health and legal medicine. These committees were originated for independent work, the academy only retaining the right to regulate their membership.

In 1854 the standing committee on public health and legal medicine was composed of John H. Griscom, chairman; John R. Van Kleek, secretary; Benjamin Drake, W. N. Blakeman, John Shanks, Joseph M. Smith, Samuel A. Purdy, A. L. White, James Stewart, and James M. Minor. A report was received from it regarding solidified milk, that was commended as a valuable addition to the resources of the traveler, as a suitable food for infants, and as a desirable article for the diet of invalids.

Apparently some of the fellows thought that a body composed exclusively of physicians was too restricted in its membership to exercise the greatest influence in promoting public health, for Dr. J. H. Griscom, in the anniversary discourse in 1854, after referring to many questions in public hygiene, advised that there should be organized a "hygiological society, having as objects of inquiry and action the entire field of the preservation of public and private health in all its varied and multitudinous relations; this society to be composed of laymen and physicians." But sufficient interest in this proposal could not be aroused at that time.

The academy seemed to find the title "Standing Committee" cumbersome, and in 1855 the constitution provided that these committees should be known as "Sections." Still, in December, 1856, under the old title of Committee on Public Health, a report was presented on alga chocolate and biscuits, in which these articles were said to be wholesome food. In that year Dr. J. H. Griscom was the chairman and Dr. J. G. Adams the secretary of the section.

It is unfortunate that no permanent records were kept of the work of the section in these early years of the academy, as Dr. J. P. Batchelder testified in his inaugural address in 1858 to the activity of the sections, each having from one to two meetings a month.

On June 7, 1858, a communication was sent to the academy from the board of health requesting that the academy lay before the board such facts and evidence as it had in relation to the milk furnished to the citizens of New York. A special committee was appointed, consisting of John Watson, J. P. Batchelder, B. Fordyce Barker, A. N. Gunn, and S. Rotton Percy, that made a report condemning the practice of housing milch cows in cities and of feeding the animals with distillery swill, condemning the use of the flesh or the milk from these animals for food, and recommending that milk venders be licensed and that the source of their milk supply be ascertained.

Perhaps at that time there was some uncertainty regarding the right of the academy to engage in work of this public character, for on the 20th of October, 1858, an amended constitution was adopted, in which the fourth object of the academy was specified to be the promotion of public health. Why those that framed our present constitution omitted this laudable and proper aim can not be here told. Certainly no body of medical men derogates from its proper functions when in any way attempting to promote public health. It would seem that the academy had weakened rather than strengthened its position and influence in the community by such an omission.

In 1862 the title of the section was amended to its present designation—the Section in Public Health, Legal Medicine, and Medical and Vital Statistics.

On September 16, 1863, Dr. John H. Griscom, whose interest in sanitary matters did not wane, presented to the academy, on behalf of the section, a report on the Ridgewood disinfecting powder, narrating a number of experiments that were made to determine the value of that preparation, which was commended as a suitable article for the purposes intended.

On May 16, 1866, Dr. Stephen Smith presented a report from the section on the measures of prevention and relief to be adopted during the prevalence of epidemic cholera; on May 30th Dr. E. R. Squibb presented a report from the section on disinfectants; and on June 6th Dr. Elisha Harris presented a report on sanitary police measures applied to the prevention and control of epidemic cholera. These subjects were carefully considered and resolutions were adopted by the academy regarding the methods and manner of handling cholera.

In the address of the retiring president, Dr. James Anderson, delivered January 16, 1867, he said: "It is with pleasure that I can refer your minds to the gratifying results of the disinterested efforts of the academy in the primary movements for the organization by the Legislature of the Metropolitan Board of Health—the child of the academy, brought forth by the continued efforts of the academy and its fellows during several years of protracted labor, with final triumph, by the aid of the Citizens' Association, effectually seconded by the prevailing fears of the approaching pestilence knocking at the doors of the city."

In 1877 and 1879 the only sections that were reported as doing work were those in surgery, in theory and practice of medicine, and in obstetrics and diseases of women and children. But the indifference that had overtaken the section in public health was but temporary, and in 1886, 1887, 1888, and 1889, through the strenuous efforts of Dr. Alexander Hadden, the chairman, and Dr. Henry E. Crampton, the secretary, important topics regarding various matters in public health were presented for the section's consideration. The efficient administration of Dr. H. D. Chapin is too recent to require more than a reference. Suffice it to say that during the past seven years all of the more important questions in hygiene have been considered by this section.

What may we learn from this review of the past history of the academy in its relation to public health? We have seen that active work in sanitation—work intended to enhance the welfare of the public of this metropolis and to serve as a guide for other cities—has been inaugurated by the academy. But there are devoted and disinterested fellows of the academy who maintain that there should be a strict construction of the constitution that states specifically that the object of the academy shall be "the promotion of the science and art of medicine, including the maintenance of a public medical library." They hold that, while this section may consider all topics within its purview, yet neither it nor the academy must do more in the effort to carry out whatever conclusions may be adopted. Does not such action as this savor too strongly of the *vox et prœterea nihil* position? A recently enacted by-law prohibits any section from inaugurating any public action on a matter it has considered without first securing the consent of the academy, so the general body can give the stamp of its approval to whatever work in public sanitation this section might wish to advocate.

There are many questions in public health that are yet to be settled; there is much yet to be done in sanitation, in regard to which the initiative should come from this academy. Take, for instance, the well-known fact that it is but recently that the recorded birth-rate exceeded the death-rate of this city, a disparity due to the carelessness of many physicians, some even fellows of this academy, to give the board of health their co-operation by reporting births that occur in their practice, and an omission that must have the disapproval of this body.

If we take the items of certain communicable diseases and compare the statistics of this city with those of London, we are struck with the excess of the proportion of the mortality to the number of cases reported in New York as contrasted with that of London.

	1890.		1892.	
	New York.	London.	New York.	London.
Scarlatina:				
Cases	3,087	15,330	7,048	27,095
Deaths	408	876	977	1,167
Mortality, per cent.	13·2	5·7	13·8	4·3
Diphtheria:				
Cases	4,250	6,420	4,654	7,781
Deaths	1,262	1,417	1,436	1,856
Mortality, per cent.	29·6	22	30·8	23·8
Typhoid fever:				
Cases	1,141	2,877	1,140	2,465
Deaths	352	618	400	424
Mortality, per cent.	30·8	21·4	35	17·2

It does not seem either probable or possible that New York physicians are so lacking in skill, or that either scarlatina, diphtheria, or typhoid fever is here so malignant that this proportion is so much greater than in London. Nor is it altogether probable that the excess is due to the fact that physicians fail to report the existence of such diseases in their practice. The table shows us that the mortality percentage from scarlatina, diphtheria, and typhoid fever was, both in London and New York, but slightly different in 1892 from that of 1890. We are therefore forced to the conclusion that there are certain local factors of environment or administration that must account for the increased mortality from these diseases in this city.

There are problems regarding our water supply, our methods of disposal of garbage, of street cleaning, of tenement-house sanitation, and of food inspection that must be solved before we can successfully grapple with the great problem of disease prevention. And the investigation of such problems by this academy can not but redound to the public welfare and the repute of the investigators.

As the constitution of the academy has provided for the existence of this section, it would seem but just that all subjects relating to sanitary science should be referred here for consideration and report. If committees are created at various times for the consideration of sanitary topics, in so far they encroach upon the legitimate sphere of work of the section and must needs interfere with its usefulness. Two sections of the academy—that on anatomy, physiology, and pathology, and that on materia medica and therapeutics—have lapsed into innocuous desuetude for lack of support and encouragement; and only the most unselfish and zealous devotion can conserve the interest in this Cinderella of the sisterhood of sections. Abler pens than mine have portrayed the possibilities for human welfare that the study and application of the principles of sanitation afford. Hygiene needs no eulogy here. But it is to be hoped that this section—the only one in the academy that affords a common meeting ground for the physician, the lawyer, the engineer, the sociologist, and the layman—may receive increased support from the fellows of the academy, and thus have its influence broadened until its capability for the greatest good to the greatest number is insured.

Original Communications.

GONORRHŒAL RHEUMATISM AND ITS TREATMENT.*

By RAMON GUITÉRAS, M. D.

History.—Gonorrhœal rheumatism has been recognized as a complication of gonorrhœa for several hundred years. Petrus Forestus, in 1507, was the first man who wrote extensively on this subject. Musgrave and Baglivi mention it in 1703 as a proof of the syphilitic character of gonorrhœa. Hunter considered it connected with gonorrhœa only. Eagle, in 1836, considered it due to copaiba and to the improper treatment of gonorrhœa. Brandes, in 1854, was the first man to bring it before the public as it is known to-day.

Ætiology; Theories of Cause.—1. First it was regarded as a direct gonorrhœal complication, as epididymitis and prostatitis.

2. Then it was found that joint swellings might develop after other irritations of the urethral mucous membrane, such as catheterism; and this led to the theory that the gonorrhœal discharge was the source of irritation in the urethra which gave rise to the rheumatism.

3. Fournier advocated the theory that it must be due to a specific gonorrhœal urethritis, and that no other form would produce it.

4. Thiry and Gurjon maintained that there was no direct connection between gonorrhœa and rheumatism, but that the former, through its depressing effects on the system, favored the development of a diathesis which had up to the time of the disease (gonorrhœa) been latent.

5. Guérin, Loraine, and Lasègue considered that gonorrhœa was a general disease, and pointed out the fact that it could produce remote complications as a proof of their theory. They considered the local manifestations of the disease as a period of incubation, and said that no remote complications would ensue if the disease could be stopped during this period, or not extend beyond it.

6. Lewin advocated a vaso-motor theory. He regarded it as a reflex vaso-motor disturbance produced by vaso-motor irritation in the inflamed urethra.

7. *Gonococci Theories.*—In the effusion of certain joints, generally the purulently inflamed, obtained either at autopsy or by puncture, diplococci and cocci have been found. These are alleged by some (*a*) to be gonococci which had entered into the circulation through the urethral erosions and were afterward deposited in the joints. To them it seemed a true gonorrhœal affection. Others (*b*) denied the presence of gonococci in the joint fluid, considering them as nonspecific cocci, and regarded the disease as a mixed infection.

In order to prove the first of these two gonococci theories three conditions are necessary:

(1) That the micro-organism be similar to the gonococcus morphologically.

(2) That it be the same in its chemical relations and its reactions to coloring matter.

(3) That the disease be produced in another by inoculation with the pure cultures.

These conditions have been proved as far as the first two and the urethral inflammation are concerned, but we lack positive proof of the third. Neither do we find any evidences of the gonococcus in the blood or lymph of the individuals affected. Therefore we must agree with the supporters of the second theory and consider it as a mixed affection.*

Frequency.—This complication occurs in from two to three per cent. of those suffering from the disease. It generally occurs in men. Age has no influence. It is not necessarily connected with a urethritis, but may result from gonorrhœa anywhere—as of the vulva, vagina, and conjunctiva.

Authorities differ somewhat as to the period at which the disease begins, to wit:

Fournier says from the sixth to the fifteenth day. Roustan, not before the third week. Struppi, never before the disease has reached the pars posterior. Loeb, it is a complication of posterior urethritis. Finger, only in the older cases.

Location.—Fournier states that two thirds of the cases are in the knee, one fourth in the ankle, and one fifth in the fingers and toes.

Nolen, in his cases, found eighty-six in the knee, fifty-two in the ankle, twenty-nine in the shoulder, twenty-six in the hand, fifteen in the hip, and seventeen in the fingers and toes.

Finger, in three hundred and seventy-one cases, found knee, one hundred and thirty-six; tibio-tarsal, fifty-nine; wrist, fifty-three; fingers, thirty-five; elbow, twenty-five; shoulder, twenty-four; hip, eighteen, maxillary, ten; metatarsus, seven; sacro-iliac, four; sterno-clavicular, four; chondrocostal, two; intervertebral, two, etc.

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* Read before the Section in Genito-urinary Surgery of the New York Academy of Medicine, May 9, 1893.

* The micro-organisms resembling the gonococcus are not able to penetrate the mucous membrane of the urethra until it has been acted upon by the gonococcus.

Jullien found fifty-nine polyarticular; forty-one monarticular.

Diagnosis.—This disease occurs during an attack of gonorrhœa, and follows its course, being governed by its exacerbations and remissions.

There is a tendency to recurrence on fresh infection.

It is less acute than rheumatism, and, although it may begin acutely, it soon changes to a subacute or chronic state.

When this complication sets in the discharge usually remains the same, notwithstanding that some claim it diminishes and others that it increases.

The various forms of this disease are divided and subdivided, after the classification of Finger, somewhat as follows:

- (1) Articular.
  - Monarticular.
    - Acute (arthritis).
    - Chronic (hydrarthrosis).
  - Polyarticular.
    - Acute.
    - Subacute.
    - Chronic.
- (2) Periarticular (nodose).
- (3) Synovitis tendinum.

(*a*) The acute monarticular (arthritis blennorrhoica) is the most frequent form. It begins acutely, or is preceded by a prodromal stage of *malaise* and tenderness in several joints, followed by a rapid onset of the arthritis; pain very acute or moderate; œdema; redness of the skin; tension considerable at times, but varying with the amount of exudation; fluctuation distinct; temperature elevated three or four degrees for a few days, highest in the sero-purulent variety. The swelling develops rapidly, and is usually in one of the larger joints, as the knee. The pain and fever disappear in a few days, leaving a painless exudation, tending to pass into a hydrarthrosis. This generally disappears in a few weeks. Occasionally, however, it terminates in suppuration. In these cases we have chills and increased temperature during the acute stage, followed by pain, œdema, throbbing, pulsating sensations; the capsule ruptures, and the pus oozes out between the muscles and tendons. This may result fatally in pyæmia, or recovery with ankylosis. Amputation is at times required.

(*b*) Hydrarthrosis (gonocele) is a chronic inflammation coming on either directly or as a sequel of arthritis. In direct cases there are no subjective symptoms; exudation takes place into the joint, which therefore increases in size gradually and prevents extreme flexion or extension. Fluctuation is very apparent. This may result in a lax joint or plastic changes, as shown by a crepitation and creaking. Deformities may follow. Duration varies from a few days to several months.

(*c*) Acute polyarticular. This resembles more closely acute articular rheumatism. It develops rapidly, involves several joints, and is painful. It differs from articular rheumatism in that the fever is not as continued or as high; a less number of joints are affected; the joints may be attacked symmetrically, although usually not more than two at a time, and then one after another; it relapses with the urethral discharge; it does not yield so quickly to antirheumatics, and there is not so much sweating.

(*d*) Subacute polyarticular is, next to acute arthritis, the most common form. The symptoms are the same as the acute form, excepting that they are much lighter, especially so in proportion to the amount of swelling present. There is very little elevation of temperature.

(*e*) Chronic polyarticular develops after the acute or subacute forms, and is the same as multiple hydrarthrosis.

2. Periarticular. Prodromal stage of *malaise*, pains in the bones, etc. Temperature is quite high at first. The joint swells rapidly. The infiltration is not in the joint, however, but in the periarticular tissue. The joint seems thickened and deformed as in gout. The mobility of the joint is not affected, except that the motion at times becomes too free. Result, complete recovery, or with ankylosis.

3. Tendo-vaginitis (synovitis tendinum). This begins with chilliness and slight fever, followed by pains which are migratory in character at first, but which soon become fixed in the sheath of some tendon, which is seen as a doughy, painful swelling. The skin becomes red and afterward œdematous. Pain is at times violent; increased by pressure and movement. The former quickly disappears, but the latter lasts for some time. The extensor communis digitorum, the flexor pollicis, and the dorsal flexors of the toes are the ones principally affected. This form is very often combined with arthritis, and, like it, may be serous, sero-fibrinous, or sero-purulent.

Serous resolves completely, or passes into a hydrops.

Sero-fibrinous may cause adhesions between the tendons and their sheaths.

Sero-purulent may end in resolution, adhesions, or suppuration.

Pathology.—This is generally considered with special reference to the contents of the joint, as serous, sero-fibrinous, sero-purulent, and purulent.

In the acute serous, in addition to the hyperæmia and swelling of the synovial membrane and ligamentous tissues, we have a fluid, straw-colored or slightly tinged with blood, containing large epithelioid and white blood cells and albumin.

In the sero-fibrinous we have a similar condition, with the addition of fibrin.

In the sero-purulent we have a greenish colored fluid, containing quantities of pus cells, many of which are fatty degenerated.

Purulent.—In these cases the joint is full of pus; the cartilages are at times eroded; the bones may be bare and the periosteum separated. In chronic cases, the capsule, ligaments, and sheaths of tendons in the neighborhood of the joint are thickened. The cartilages may also be thickened, and atrophy of the muscles near the joint is frequently noticed, due probably to disuse or a peripheral neuritis.

Prognosis.—The serous variety generally ends in complete resolution. It may, however, terminate in hydrops or arthritis deformans, or it may develop into the sero-fibrinous or the sero-purulent variety. The sero-fibrinous and the sero-purulent generally resolve in a few weeks under treatment. They may end in partial ankylosis or even in suppuration.

The purulent variety usually terminates in recovery with ankylosis. It may end in pyæmia.

Other Complications.—Endocarditis and pericarditis occasionally occur complicating a blennorrhagic rheumatism, and sometimes, though rarely, as a direct complication of the gonorrhœa. This generally comes on acutely, the temperature reaching as high as 102° or 103°, accompanied by a feeling of oppression and dyspnœa and irregular and violent heart action. The mitral valve is the one usually affected.

Eruptions occasionally accompany this, generally a purpuric one, though erythema multiforme or nodosum and urticaria may also occur.

Certain eye complications, as iritis, aquo-capsulitis, and conjunctivitis, have at times been noticed.

1. Iritis is the most serious of these complications, and resembles the ordinary rheumatic iritis—discoloration, impaired mobility of the iris, contraction and distortion of the pupil, occasionally photophobia, ciliary injection, and a smoky, opaque cornea. On ophthalmoscopic examination this opacity is seen to be due to a number of whitish points collected in the lower half of the cornea, probably the condition of *kératite ponctuée* described by Panas.

2. Aquo capsulitis is an inflammation involving principally the membrane of Descemet, and is the commonest form of complication. In this condition the cornea is more prominent than usual, the conjunctiva is injected, and the fluid in the anterior chamber is cloudy. When iritis is associated, we have its train of symptoms in addition.

3. Conjunctivitis occasionally occurs in connection with this disease, and has been principally dwelt upon by Fournier.

Bursitis (gonorrhœal). The one under the tuber ischii —giving symptoms of muscular rheumatism and sciatica— is at times inflamed; not so frequently, however, as the one in front of the tendo Achillis and that beneath the os calcis.

Pied blennorrhagique, a complication first described by Jaquet in 1892, often resembles these forms of bursitis in their earlier stages. It consists of an inflammatory process involving the calcaneum and the ligaments.

Complications of the Nervous System.—The spinal cord may also at times be involved. In these cases certain symptoms referring to the sensitive and motor tracts are noticed, as neuralgias, hyperæsthesia, anæsthesia, cramps, atrophy of muscles, increased reflexes, twitchings, etc.

Nerves irrespective of the spinal cord are occasionally involved individually. In this class of complications sciatica is principally noticed, although cases of crural, inguino-scrotal, and other neuralgias are at times observed. They generally complicate the polyarticular type.

There are other complications, as of the palmar and plantar fascias, the ano-coccygeal rhaphe, etc., which occasionally occur.

Treatment.—This is very varied and generally very unsatisfactory. When an attack of rheumatism occurs, either alone or as an accompaniment of gonorrhœa, the first thought is to give an antirrheumatic. On our list of antirrheumatics used in the treatment of this disease we find salicylic acid, salicylate of sodium, salol, oleum gaultheriæ, colchicum, and the alkalies and salts of potassium, lithium, and sodium. Between salicylic acid and salicylate of sodium, the latter seems to be preferable and to act more efficaciously. This can be given in doses of fifteen grains every four hours, and seems to be of decided benefit in many cases of the acute monarticular and polyarticular types during the first few days of the attack, decreasing the fever and the severity of the pains. Here, however, its efficacy frequently ceases, and whereas it has reduced the disease to a subacute condition, it does not seem able to accomplish a cure.

Salol has, in my practice, supplanted the other salicylates. It has the same effect in reducing the temperature and diminishing the severity of the pains, besides being far more agreeable to take, not causing the nausea and gastric disturbances that are wont to accompany the use of salicylic acid and salicylate of sodium. This I use in acute cases in doses of five to fifteen grains three times a day, the ordinary dose being ten grains. When severe neuralgic pains accompany this, phenacetin makes a valuable adjunct. Here I give two grains and a half of each in pill every three hours, and from five to ten grains of salol in addition night and morning.

Oleum gaultheriæ is of value in both the acute and subacute stages of this variety of rheumatism, and comes the nearest to a specific of any of the many remedies used. I am in the habit of beginning with five grains three times a day and of running it up to two drachms and even three drachms in the twenty-four hours. A good way to prescribe it is five to twenty drops every two hours in milk.

Colchicum is also of service, especially in the later cases. It cures not only by its systemic action, but also by its action on the gonorrhœa itself, and was at one time quite extensively used in the treatment of urethritis. It often produces good results alone, but works better combined with salicylate of sodium and iodide of potassium.

Alkalies are of service throughout the disease and have a double action, antiblennorrhagic and antirrheumatic, and by means of their diluent properties they decrease the acidity of the urine and thus tend to diminish the urethral irritation. For this purpose the effervescing carbonate of lithium tablet, or one composed of the bicarbonate and citrate of potassium, five grains each, every three hours, can be used.

Internal Antiblennorrhagics.—Copaiba, cubebs, and oil of sandalwood are all good on account of their action through the urine on the mucous membrane of the urethra. They tend to diminish the urethral inflammation without irritating it, and are therefore of more service in treating the cause than astringents or other injections. I am in the habit of putting my patients on antiblennorrhagics whenever they develop rheumatism during the earlier stages of the disease, at a time when the discharge is still acute or subacute.

Local Antiblennorrhagics.—Treatment of the urethral inflammation by astringent injections, both anterior and deep, or by irrigation, or again, by local applications through the endoscope, seems to aggravate the rheumatism rather than to benefit it. The washing out of the bladder likewise seems to have an irritating effect. In fact, so unsatisfactory has been my experience with local antiblennorrhagic treatment during these attacks, that I have instantly discontinued them and substituted the internal antiblennorrhagics in their stead.

Surgical Treatment of the Urethritis.—In case strictures happen to be present I have found it of decided value, and many obstinate cases have quickly recovered after an internal urethrotomy. Sounds, on the other hand, seem to aggravate rather than to benefit the condition.

General Treatment.—Iodide of potassium is of value as an alterative, and seems to benefit the subacute and chronic conditions when there is thickening about the joint with no marked ankylosis.

Donovan's solution will also at times be of service through its alterative action.

Tonics are of service when the individual is cachectic or "below par." Of these iron is the most efficient, either alone or combined with strychnine or quinine. Syrup of the iodide of iron is of the greatest benefit when an alterative as well as a tonic effect is desired.

Strychnine is especially beneficial when the nervous system has been weakened by the attack.

Quinine has been regarded by some as a specific and given in large doses as such. It probably has no other effect, however, than that of a tonic.

Baths, especially sulphur, are of decided benefit in the subacute and chronic varieties.

Local Treatment.—Counter-irritation is beneficial in all forms of the disease, and generally in proportion to the severity of the treatment. Tincture of iodine painted on night and morning until vessication is produced affords relief, but does not seem to have as speedy or as beneficial an action as nitrate-of-silver solution when used in the same way.

Blisters seem to be one of the most efficacious methods of producing counter-irritations, and they should be applied generously either in several small areas over an inflamed joint or as one large blister covering nearly the entire joint surface. The former seems to be most valuable in the acute cases, the latter in the chronic.

The Paquelin cautery at times in the acute stages produces immediate relief of pain and hastens a curative process. I doubt, however, whether its effects are as good or as lasting as those of the continued counter-irritants mentioned above.

Icthyol ointment, fifty per cent. in lanolin, has given me by far the best results of any local counter-irritant application. The counter-irritation produced by the icthyol is apparently very light, as it takes several applications to make any pronounced redness of the skin. The effects of the ointment are, however, at times marvelous, and two or three nightly rubbings will sometimes give permanent relief in patients who have been suffering for weeks. These cases are generally subacute or chronic—indolent ones where no marked tissue changes have occurred.

Absorbents.—Local treatment tending to cause absorption is of the greatest value after the acute symptoms have passed away. Under this head I include massage, electricity, and pressure from elastic bandages.

Massage by the method known as *pétrisage*, combined with Swedish (passive) movements, and followed by pressure with elastic bandages or stockings, produces the best results, after the acute stage has disappeared, of any treatment either external or internal. The massage increases the circulation in the joint and stimulates the absorption of the exuded matter by the veins and lymphatics, and the rubber bandages by pressure prevent further exudation. This, of course, should not be resorted to when there are any evidences of pustular inflammation.

Electrization by the galvanic current is of decided service (the strength usually used being from five to fifteen cells). I am in the habit in the hospital cases of having massage given one day and galvanism the next.

Potassium-iodide and mercurial ointments are of doubtful value. The former in some cases has seemed to be efficient, but whether the beneficial action was due to the virtues of the iodide or to the massage necessary to rub it in I am not prepared to say. I use it occasionally in an ointment of lanolin, in the strength of one to eight, in chronic cases where thickening and adhesions are present.

Other Local Remedies.—Leeches are frequently valuable in cases of the monarticular variety during the acute stage. They seem to afford by their depleting action temporary relief.

Poultices are good when there is much pain in the acute stages. They are, however, of especial value in the suppurating forms of the disease before resorting to surgical interference.

Alternating hot and cold douches have in some chronic cases seemed to act beneficially.

Cold applications, either in the form of cold cloths or an ice bag, are also grateful during the acute stages in the monarticular variety.

Surgical Treatment.—When pus has formed and pyæmia is threatening, free incisions should be made and the joint irrigated with bichloride solution, 1 to 10,000, followed by a boric-acid solution. In cases where the suppurating process has involved the surrounding tissue amputation may be necessary. In other suppurative cases where the joint is partially destroyed resection may be performed.

79 West Fifty-fourth Street.

THE USELESSNESS OF A MYDRIATIC
IN EXAMINING AN EYE
FOR THE PURPOSE OF PRESCRIBING GLASSES.*

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In 1876 I wrote a paper, which was read before the International Congress of Ophthalmology, on the relation of blepharitis ciliaris to ametropia. It was stated in that paper that many cases of this disease were connected with, and caused by, errors of refraction, and that the condition in such instances could not be cured unless the refraction was first corrected. This view caused some discussion, but I believe that its conclusions were finally considered by experts in ophthalmic disease to be, in the main, accurate. The point was also then made that it was impossible, in a large number of cases occurring in young persons, to determine whether or not a refractive anomaly existed unless paralysis of the ciliary muscle had been produced by the use of a mydriatic, and it was argued that the reason that many observers did not find this relation existed between blepharitis and ametropia was that they did not thoroughly test the refraction with the aid of a mydriatic. I still think that this view is correct, but I did not ask your attention for the purpose of saying any more upon this subject of the relation of certain diseases of the eyelids to uncorrected errors of refraction. I merely wished to bring to your attention, as preliminary to the present discussion, the fact that very early in my practice I resorted to the thorough use of a mydriatic before attempting to determine, the in case of young people with asthenopic symptoms, whether or not glasses should be worn, and if so, what. I continued this practice of using a mydriatic for the purpose of measuring the eye up to the year 1888, both in my hospital and private practice. It is a method of treatment entirely satisfactory in its final results, but it is extremely disagreeable to the patient; it involves a great deal of time, and it is tedious in the extreme to the practitioner. In many instances it was found to have been unnecessary, except that the positive determination that no considerable degree of astigmatism existed was made. It often settles the fact that there is no astigmatism sufficient to be corrected, and that only hyperopia or myopia, which can be very well determined by the ophthalmoscope, exists.

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* Read by title before the Medical Society of the State of New York, February 7, 1894.

While in Paris, in 1887, and seeing a little of the work of Dr. E. Javal, I was greatly surprised to find that he, who had been an enthusiastic advocate of the use of atropine for as long a time if not longer than I had myself, and who was in the habit of prescribing glasses from the results obtained by the atropine, now, since he had perfected the ophthalmometer—the instrument for measuring the cornea—had entirely abandoned the practice. I found also that Dr. Bull, formerly on my staff, concurred in these views.

But this thorough use of atropine, which I believe was properly insisted upon as the only sure means of accurately determining the refraction, was somewhat abused by those who recommended it when there was no apparent spasm of accommodation, and for persons in middle life or advanced years. After 1876, papers began to appear from neurologists and young ophthalmologists, showing that they used atropine in what I should term an indiscriminate way—for example, in persons beyond forty years of age, where there can be no question, except in entirely extraordinary and exceptional cases, of spasm of accommodation. These writers ignore the physiological principle of tone in a muscle. In other words, presbyopes, who needed nothing but a few minutes' testing with glasses, were put under the influence of atropine, and persons with an eye so nearly normal that its deviation from emmetropia could be expressed by a positive spherical glass of one or two dioptres, were considered to be subjects for glasses because under atropine they would accept, say + 0·50 D., when really all the belladonna had done was to remove the tone of the muscle. Something must be allowed for this in every human eye. The attempt to convert an ordinary eye into an ideal one, which in some quarters is said to be the proper course, I deprecate, founding my opinions primarily upon the work of Donders and Loring, both of which authors dwelt properly, as it seems to me, on the natural tonicity of the ciliary muscle. Most observers have long since come to the conclusion that the hypermetropic eye is the average eye of the human race, excluding myopia, and that it is a condition which of itself can cause no inconvenience until presbyopia is reached, when to the congenital axial elongation of the eye must be added flattening of the lens and rigidity of the ciliary muscle caused by time. Then, as everybody knows, a glass will be required for the presbyopia plus the hypermetropia.

When I found Javal measuring the cornea, and being satisfied with that as a means of determining the refraction, I undertook the same practice myself, and after six years of experience I am convinced that the use of a mydriatic to determine what glass should be worn is entirely unnecessary if the ophthalmometer is used. The great object in using a mydriatic was not to determine how much hypermetropia existed — that can be approximately estimated, although not always with complete accuracy, with the ophthalmoscope—but it was used to determine if astigmatism existed, and if so, of what degree. Now this can be determined in a very few moments in the vast majority of cases—in, I think, as large a proportion as ninety-nine out of a hundred—by measuring the cornea alone, for lenticular astigmatism, although it was the kind possessed by its great discoverer, Dr. Thomas Young, about ninety-five years ago, very rarely exists, and in general considerations it need not be taken into account. Early in the investigations of astigmatism, Donders showed just how much corneal astigmatism the lens would overcome by its oblique position. This observation has been verified by the work of Javal, many others, and myself. In a very large practice in refraction cases in the Manhattan Eye and Ear Hospital for the last three years, my staff and myself have not used a mydriatic, except in the most exceptional cases, for the purpose of testing patients for glasses. We have never had such satisfaction in our prescriptions, and we have relieved our patients of a great loss of time and ourselves of a great burden in work. I commend this method to the respectful consideration of my fellow ophthalmologists. If the ophthalmometer is used, and the difference between the vertical and horizontal meridians of the cornea is once fairly established, the rest of the prescription becomes a matter of a very short time. Besides this, I believe, as I have attempted to show in a paper published in the *Medical Record*,* that in young persons with asthenopia, caused by an error of refraction, who have as much as a dioptre of corneal astigmatism, it will usually be sufficient to correct the astigmatism, and to allow the hypermetropia to be cared for by the ciliary muscle.

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* March 26, 1892.

A STATISTICAL RECORD OF
FIVE THOUSAND CASES OF SMALL-POX.

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(*Concluded from page 330.*)

In the next table is illustrated, first, the efficacy of recent vaccination as performed in infancy, and, secondly, the gradual loss of vaccine protection as the individual grows older:

TABLE VIII.—*Showing the Cases classified as to Age Periods of the Patients, and also as to their Vaccine Condition in each of these Periods.*

	Admitted.	Died.	Per cent. of deaths.
UNDER ONE YEAR:			
Unvaccinated	78	57	73·07
Vaccinated	2	....	.....
ONE TO SEVEN YEARS:			
Unvaccinated	404	208	51·48
Vaccinated in infancy, good mark	10	....	.....
" " " fair mark	10	1	10·0
" " " poor mark	15	1	6·66
Total number vaccinated	35	2	5·70
SEVEN TO FOURTEEN YEARS:			
Unvaccinated	222	71	31·98
Vaccinated in infancy, good mark	55	2	3·63
" " " fair mark	23	2	8·69
" " " poor mark	59	9	15·25
Total number vaccinated	137	13	9·48
FOURTEEN YEARS AND UPWARD:			
Unvaccinated	1,038	681	65·60
Vaccinated in infancy, good mark	1,344	122	9·07
" " " fair mark	629	93	14·78
" " " poor mark	994	280	28·16
Total number vaccinated	2,967	495	16·68

It can not be questioned that, in a large city like Philadelphia, where gratuitous vaccination is provided for the poor and improvident class of the community, there must be a very much larger number of children under one year old vaccinated than unvaccinated, and yet it is seen by the table that seventy-eight of the latter were admitted to the hospital, and only two of the former. The unvaccinated perished in the proportion of 73·07 per cent., while both of the vaccinated of course recovered. One of the vaccinated children was eleven months old; had been vaccinated two months previously; showed a good cicatrix; had varioloid in an exceedingly mild form, the eruption consisting of only six small vesicles; and the child was at no time scarcely ill at all. The other vaccinated case had the disease so indistinctly marked that, following the diagnosis of varioloid as recorded in the *Record Book*, I find a mark of interrogation, which, interpreted, means that the diagnosis was somewhat doubtful. These facts show that small pox among unvaccinated children under one year old is very common and fatal; also that among vaccinated children at this age the disease is very rare, and, when it occurs at all, it is no more to be feared, so far as danger to life is concerned, than ordinary vaccina.

In children between the ages of one and seven years small-pox is, of course, very common among the unvaccinated, and occasionally it is seen in a very mild form among the vaccinated; but death never results where there is evidence of thorough vaccination, except from some serious complication. It is seen in the table that one death occurred under the head of "fair" vaccine mark. In this case the child was about a year old, a foundling, badly nourished, having disordered digestion, and was very feeble. The eruption consisted of only a very few small vesicles. Death resulted from sheer debility. Very little need be said of those classified under the head of "poor" vaccine scars, as the vaccination in all such cases was either imperfect or spurious.

In the next age period—seven to fourteen years—it is worthy of note that the death-rate among the unvaccinated cases is very much lower than at any of the other age periods. Possibly the explanation of this is that the recuperative powers of life are most active at that age, or that some of the depressing habits common in later life, such as intemperance and the like, have not yet been formed. At this period of life post-vaccinal cases of small-pox increase considerably, and occasionally death occurs from the disease, even after quite thorough infantile vaccination. These facts clearly indicate that the vaccination of infancy is apt to lose at this period more or less of its protective power.

The last age period noted in the table—fourteen years and upward—illustrates, in the first place, how large is the number of youths and adults who have never enjoyed the prophylactic power of vaccination. Among this class, too, the death-rate is seen to be considerably higher than that of the corresponding class in either of the two preceding age periods. The table also proves in a very indubitable manner, by the great increase of post-vaccinal cases of small-pox at this age period, that vaccination in infancy can not be depended upon to confer protection against the disease in the later life of the individual. There are therefore two important facts prominently brought forward in this table: First, that recent vaccination confers absolute, or almost absolute, protection against small-pox, and, secondly, that when vaccination has been performed in infancy revaccination is required at, if not before, the age of puberty.

My experience leads me to place implicit confidence in the efficacy of revaccination, although the statistics presented in Table IX are somewhat vague and indefinite, and do not therefore fully or clearly demonstrate the real merits of the measure. The table simply contains the relevant data as obtained from the patients who claimed to have been vaccinated in infancy and subsequently revaccinated, together with the general results.

In tabulating the cases represented in the following table I have been obliged to accept the statements of the patients, first, as to the fact of revaccination, and, secondly, as to the time when it was performed. Their testimony as to whether or not it was successful I have found very unreliable. To use their own language, they often said "it took a little" or "the arm was very sore," and frequently they did not remember whether it "took" at all, but would point to a

TABLE IX.—*Showing the Cases occurring in Patients after alleged Revaccination.*

No.	Age.	Character of marks from vaccination in infancy.	Character of marks from the alleged revaccination.	Length of time since the alleged revaccination.	Disease.	Result.	No. of days in hospital.	Remarks.
1	45	Poor.	Doubtful.	31 years.	Varioloid.	Recovery.	23	
2	23	"	Fair.	6 to 8 years.	"	"	7	Eruption very light, mostly papular; patient not confined to bed.
3	65	"	Poor.	24 years.	"	"	8	Disease very mild.
4	34	Fair.	Doubtful.	9 years.	Confluent variola.	"	77	
5	23	Poor.	"	13 years.	Varioloid.	"	7	
6	20	"	"	4 weeks.	Variola.	Death.	14	
7	21	"	"	11 years.	Varioloid.	Recovery.	19	
8	27	Fair.	Fair.	8 years.	Variola.	"	28	
9	20	Good.	Good.	10 years.	Varioloid.	"	6	Disease very mild.
10	23	"	Poor.	Since puberty.	"	"	19	Eruption consists of about six vesicles.
11	24	Fair.	Doubtful.	3 months.	Variola.	"	19	
12	19	Poor.	Very poor.	4 weeks.	Varioloid ?	"	4	Eruption only papular, disappearing in two or three days.
13	20	Good.	Invisible.	2½ years.	Variola.	Death.	4	Does not give a very intelligent account of revaccination; case hæmorrhagic.
14	26	"	Good.	14 years.	Varioloid.	Recovery.	7	Eruption very light; only slightly vesicular.
15	23	Poor.	Invisible.	10 years.	"	"	24	
16	26	Good.	Good.	2 months.	Varioloid ?	"	2	The variolous eruption so mild as to be of a doubtful character.
17	22	Poor.	Fair.	7 years.	Varioloid.	"	7	Eruption very mild; three months pregnant. Abortion threatened, but did not occur while in hospital.
18	24	Good.	Poor.	9 years.	Varioloid ?	"	21	Eruption so mild as to be of doubtful character.
19	35	Poor.	Invisible.	21 years.	Varioloid.	"	11	
20	37	Fair.	Fair.	21 years.	"	"	21	
21	20	Good.	Poor.	1 month.	"	"	9	Eruption very light.
22	44	"	"	6 years.	"	"	14	
23	24	Fair.	"	6 weeks.	"	"	11	
24	17	Good.	"	4 months.	"	"	15	
25	24	"	"	2 months.	"	"	11	
26	17	Fair.	Fair.	3 months.	"	"	9	
27	29	"	Fair.	6 months.	"	"	26	Eruption consists of only a few papules, which did not become vesicles.
28	18	Good.	Scarcely visible.	6 months.	Variola.	"	33	
29	35	Poor.	Uncertain.	16 years.	Varioloid.	"	26	All marks have the appearance as if from primary vaccination.
30	52	Fair.	Invisible.	5 years.	Variola.	"	51	
31	35	Good.	Fair.	2½ years.	Varioloid.	"	18	Says was exposed to the infection of small-pox shortly after revaccination, but did not take the disease then.
32	24	"	Invisible.	7 years.	Variola.	Death.	4	Claims to have been revaccinated at seventeen years of age, but no scar resulted.
33	24	"	Fair.	8 years.	Varioloid.	Recovery.	10	Disease very mild.
34	26	"	Poor.	4 years.	"	"	20	
35	48	Poor.	"	14 years.	"	"	23	
36	30	Fair.	Fair.	14 years.	Variola.	"	64	
37	19	Good.	Poor.	5 years.	Varioloid.	"	19	
38	40	"	"	13 years.	"	"	7	
39	44	Poor.	"	15 years.	"	"	11	
40	36	Good.	Good.	14 years.	"	"	19	
41	34	Poor.	Poor.	18 months.	"	"	19	Eruption very light.
42	36	Good.	Fair.	3½ years.	"	"	19	Eruption very light.
43	58	Poor.	Not characteristic.	16 years.	"	"	16	
44	24	Fair.	Poor.	14 years.	"	"	14	
45	16	Very poor.	Very poor.	1 year.	"	"	14	Eruption very light.
46	57	Fair.	Poor.	37 years.	"	"	12	Eruption very light.
47	19	Poor.	Not characteristic.	2 years.	"	"	10	
48	23	Good.	" "	17 years.	Variola.	Death.	18	Case hæmorrhagic; complicated also by disease of the brain.
49	25	Poor.	Poor.	9 years.	"	"	8	Eruption confluent.
50	40	Invisible.	"	17 years.	"	"	15	Eruption confluent; gangrenous inflammation of right arm.
51	33	Poor.	Invisible.	9 years.	Varioloid.	Recovery.	16	Eruption very light.
52	19	"	Good.	9 years.	Variola.	"	69	
53	23	Good.	Fair.	10 months.	Varioloid.	"	9	Very mild case.
54	35	Very poor.	Very poor.	6 years.	Variola.	Death.	6	Eruption confluent and flat.
55	46	Good.	Fair.	19 years.	Varioloid.	Recovery.	21	
56	46	Very poor.	Very poor.	18 years.	"	Death.	3	Suffering also from chancre.
57	56	Poor.	Poor.	4 years.	"	Recovery.	22	
58	27	Invisible.	Good.	12 years.	"	"	20	
59	54	Very poor.	Doubtful.	32 years.	"	"	38	
60	25	Fair.	Poor.	13 years.	"	"	13	
61	35	Good.	Very poor.	10 years.	"	"	18	
62	38	Very poor.	Poor.	8 years.	"	"	26	
63	26	Good.	Not recorded.	16 years.	"	"	11	Eruption consists of about twelve vesicles, which are scarcely characteristic.

TABLE IX.—(*Continued.*)

No.	Age.	Character of marks from vaccination in infancy.	Character of marks from the alleged revaccination.	Length of time since the alleged revaccination.	Disease.	Result.	No. of days in hospital.	Remarks.
64	35	Fair.	Not characteristic.	19 years.	Variola.	Death.	6	Hæmorrhagic tendency.
65	40	Indistinct.	Indistinct.	9 years.	Varioloid.	Recovery.	17	Disease very mild.
66	36	Good.	Poor.	18 years.	Variola.	Death.	11	Eruption intensely confluent.
67	38	Fair.	Very poor.	10 years.	Varioloid.	Recovery.	42	Two months pregnant.
68	30	Poor.	Poor.	2 years.	"	"	12	
69	48	Good.	Good.	22 years.	"	"	32	
70	40	"	Fair.	31 years.	"	"	26	
71	22	Poor.	"	4 years.	"	"	15	
72	26	Good.	Poor.	9 years.	"	"	7	Disease very mild.
73	45	Poor.	"	5 or 6 years.	"	"	41	Says was vaccinated when an infant and again at five or six years of age, but does not know which scar belongs to the former or which to the latter.
74	29	Good.	Very poor.	5 or 6 years.	"	"	19	Says the revaccination took only slightly.
75	40	"	Good.	4 years.	"	"	92	
76	53	Fair.	Poor.	7 years.	"	"	22	
77	24	Good.	Good.	10 or 11 years.	"	"	36	
78	40	Fair.	Poor.	17 years.	"	"	27	Disease very mild.

mark which they said they had always believed was the result of revaccination. Not infrequently marks were pointed out as the result of revaccination which were an exact counterpart of one or more other marks present on the arm, and which were known to have resulted from the primary vaccination. It is evident, therefore, that it would be very difficult to say how many of the cases recorded in the table should be regarded as authentic examples of small-pox occurring after successful revaccination. Some, I think, should be so regarded.

The more positive evidence of the efficacy of revaccination is to be found in the fact that persons recently revaccinated with effect do not take small-pox when freely exposed to the infection. During my service of twenty-three years no resident physician of the hospital, no nurse, laundress, cook, or any other employee who was properly revaccinated before entering on duty has taken small-pox. Perhaps I should except a female nurse who was revaccinated on the first day of her residence in the hospital with almost typical result. In the course of about two weeks I noticed on the forehead of this nurse, near the edge of her hair, one or two variolous vesicles, which were preceded by but little if any febrile disturbance. At any rate, she was at no time disabled from performing her usual duties.

What vaccination has done for these employees, whose duties have necessarily brought them in the closest possible contact with the infection of small-pox, it will do for any or all who fully avail themselves of its protective influence. I am firmly of the opinion that if all persons were properly vaccinated in infancy and again at the age of puberty Jenner's prediction as to the power of this agent to extirpate small-pox from the globe would soon be realized.

In the following and last table which I shall present are contained the principal data at hand in regard to the cases or alleged cases of second attacks of small-pox. There is found in it also the same element of uncertainty as to the authenticity of many of the cases as existed in the preceding table, though perhaps to a less degree, and this uncertainty is owing to the same cause—namely, the unreliability of evidence furnished by the patients.

TABLE X.—*Showing the alleged Cases of Second Attacks of Small-pox.*

No.	Present age of patient.	Age at which the alleged previous attack occurred.	Whether or not vaccinated prior to the alleged previous attack.	Character of the vaccine mark.	Extent of pitting.	Type of present attack.	Result.	Remarks.
1	35	6 years.	Not vaccinated.	....	Very little.	Greatly modified.	Recovery.	Was confined to bed only during the initial stage.
2	31	Childhood.	Vaccinated.	Poor.	" "	Very mild.	"	Was confined to bed only during the initial stage.
3	22	"	"	"	" "	" "	"	So mild as to be a doubtful case of varioloid.
4	49	"	Not vaccinated.	....	No pitting.	Unmodified.	"	
5	49	10 years.	Vaccinated.	Poor.	Doubtful.	Modified.	"	
6	24	Childhood.	Not vaccinated.	....	No pitting.	Unmodified.	"	
7	45	19 years.	Vaccinated.	Not noted.	Two or three doubtful scars.	Very mild.	"	Eruption consisted of only a few papules which never became vesicular.
8	28	2 years.	Not vaccinated.	....	Well marked.	Greatly modified.	"	Vesicles few in number and dried up quickly; was ill only during the initial fever.
9	34	15 years.	Vaccinated.	Poor.	No pitting.	Unmodified.	Death.	
10	31	Childhood.	Not vaccinated.	....	Some pitting.	Very mild.	Recovery.	Presents only three or four variolous vesicles.
11	20	"	Vaccinated.	Good.	No pitting.	Modified.	"	
12	20	10 years.	Not vaccinated.	....	Doubtful.	Unmodified.	Death.	
13	27	8 years.	Vaccinated.	Poor.	No pitting.	"	"	Three months pregnant; aborted on the first day of the eruption.
14	22	18 years.	"	Good.	" "	"	"	Confluent.

TABLE X.—(*Continued.*)

No.	Present age of patient.	Age at which the alleged previous attack occurred.	Whether or not vaccinated prior to the alleged previous attack.	Character of the vaccine mark.	Extent of pitting.	Type of present attack.	Result.	Remarks.
15	22	18 years.	Vaccinated.	Two good.	Very little.	Modified.	Recovery.	Shows about half a dozen small scars, said to be the result of a previous attack; disease at present mild; only seven days in the hospital.
16	13	3 years.	"	" "	Slight pitting.	"	"	
17	17	Childhood.	"	No visible mark.	Some pitting.	Greatly modified.	"	Eruption not even vesicular.
18	18	14 years.	"	Poor.	Very little.	Greatly modified.	"	Eruption so mild as scarcely to be characteristic; four days in hospital.
19	18	6 years.	Not vaccinated.	....	Some pitting.	Greatly modified.	"	Eruption very light.
20	28	10 years.	Vaccinated.	Poor.	Deeply pitted.	Greatly modified.	"	Eruption very light.
21	15	Childhood.	"	Good.	No pitting.	Unmodified.	"	Thinks he had small-pox when a child.
22	30	25 years.	"	"	" "	Modified.	"	Says his doctor called the alleged previous attack small-pox.
23	23	6 months.	"	"	Doubtful.	"	"	Says she was vaccinated when four weeks old.
24	14	3 years.	Not vaccinated.	....	No pitting.	Unmodified.	"	Says her mother tells her she had small-pox when three years of age.
25	35	Childhood.	Vaccinated.	Three good.	Very little.	Modified.	"	
26	31	6 years.	"	Two poor.	Doubtful.	"	"	
27	24	18 months.	Not vaccinated.	....	Deeply pitted.	Greatly modified.	"	Eruption only papular.
28	25	10 years.	Vaccinated.	Good.	Some pitting.	Modified.	"	Three months pregnant; aborted the first day of eruption. Eruption very mild.
29	19	7 years.	"	Poor.	Two small pits.	Unmodified.	Death.	
30	12	3 years.	"	No visible marks.	One or two pits.	Modified.	Recovery.	
31	21	Childhood.	Not vaccinated.	....	No pitting.	Unmodified.	"	
32	24	16 years.	" "	....	" "	"	Death.	
33	16	7 years.	" "	....	" "	"	Recovery.	
34	21	13 years.	Vaccinated.	Good.	One pit.	Modified.	"	
35	22	8 years.	"	Two good.	No pitting.	"	"	Two months pregnant.
36	38	Childhood.	"	Fair.	" "	"	"	
37	44	"	"	Poor.	" "	"	"	Only a few variolous vesicles.
38	41	31 years.	"	"	" "	"	"	
39	31	11 years.	"	Very poor.	Doubtful.	Greatly modified.	"	Eruption barely vesicular.
40	17	2 months.	Not vaccinated.	....	"	Unmodified.	"	
41	21	6 months.	Vaccinated.	Poor.	No pitting.	"	"	
42	23	6 years.	"	"	" "	Modified.	"	
43	24	7 years.	Not vaccinated.	....	Some pitting.	Unmodified.	Death.	About eighteen pits on face. It is possible for these to have resulted from chicken-pox.
44	41	18 years.	Not noted.	....	Well marked.	Greatly modified.	Recovery.	Eruption only papular.
45	50	2 weeks.	Vaccinated.	No visible marks.	No pitting.	Modified.	"	Says the alleged previous attack of small-pox occurred about the time she was vaccinated, and that two of her sisters had small-pox at the same time and are pitted.

It is certain that very many of the cases recorded in the foregoing table should not be regarded as true cases of recurrent small-pox. For instance, where it is seen that a small-pox patient has never been vaccinated, shows little or no pitting, and is suffering from an unmodified form of the disease, it is more than probable that there has been no previous attack. Slight pitting, when present, is not necessarily proof of such an attack having existed, for the pitting may have resulted from chicken-pox, which disease, I well know, is often mistaken for small-pox. So also all those cases having a history of thorough vaccination in infancy, if characteristic pitting of the alleged previous attack is absent, should be regarded as very doubtful cases of recurrent small-pox. It would be very exceptional indeed for a person first to take vaccina, then small-pox, and subsequently a second attack of the disease.

There is no doubt that a few of the cases recorded in the table should be regarded as genuine second attacks of small-pox, but in most such cases the disease was exceedingly mild—so mild, indeed, in some instances as scarcely to be recognizable. I have never yet seen an unmodified, or even a severe, case of small-pox occur in a person who was deeply and characteristically pitted from a previous attack. Such cases I know may be found on record, but it has not been my fortune to meet with them. I might say, furthermore, that during my many years of service no person has been admitted to the hospital twice suffering from any form of the variolous disease. In view of all these facts, I can not help believing that second attacks of small-pox are much rarer than is generally supposed.

821 NORTH BROAD STREET.

SCANTY MENSTRUATION.*

By FRANKLIN TOWNSEND, A. M., M. D.,
ALBANY, N. Y.

Mr. President and Gentlemen of the Society: Through the polite courtesy of our worthy president, Dr. Bendell, and Dr. Andrew F. Currier, of New York, I have been invited to take part in this general discussion on menstruation and its abnormities. That portion of the subject allotted to me being Scanty Menstruation, and, as naturally happens at these meetings, time for the reading of papers on all subjects must of necessity be limited, because of the vast amount of work to be gone through with during the session, I feel that, like the first portion of my subject, the term "*scanty*" may well apply to whatever oral flow I may now make before you. As I understand it, scanty, like profuse menstruation, indicates one of the ordinary departures from what we all understand as characteristic of a normal or healthy monthly discharge of menstrual blood from the uterus, to any deviation from which the term "paramenia" might aptly apply.

One of the most interesting works on all the peculiar diseases of womankind to me is that of Dr. Robert Barnes, of London, under whose tuition I had the opportunity of gaining much in an early training which proved so beneficial to me in after years. This author classifies the subject of disordered menstruation under the one term "amenorrhœa," including deficiency of the flow. But it would seem to me that terms of this nature, like so many others we as physicians have to use in medicine, are inadequate to express that which we really mean. Many different conditions may exist besides the one that is most prominent; at the same time, this *main symptom* is that which attracts the attention of the patient, and which eventually causes her to seek medical advice. It must, therefore, become evident to us all that to thoroughly analyze our patient's condition, and to discover, if possible, what are the associated phenomena connected with the case, as well as to what the cause of the most prominent symptom is due, becomes our serious duty.

With these preliminary remarks allow me, then, to take up some of the various causes which seem to induce "scanty menstruation," as a part of the general subject under discussion.

To my mind the most fertile soil to develop such a malcondition is to be found in the state of the blood, and by this I mean that when the blood plasma is wanting in its normal constituents, and where the blood globules are deprived of their natural ingredients, both caused by malnutrition, the general body *must suffer*, and the term "chloro-anæmia," therefore, has thus been given to express such a condition. As to this class of chlorotic patients there could be much said, more especially by the specialist in nervous diseases; and as I write, I can bring to mind much of solid worth as coming from such men as Goodell and Mitchell, of Philadelphia, who not only recognized the curious neurotic elements connected with such cases, but also through this knowledge made application of the same by instituting a course of treatment which has availed much for suffering women.

Should we draw a comparison between the society woman of to-day, the humble, hardworking peasant, and the Indian squaw or stout negress from our southern latitude, it would be difficult to believe that *all* could have sprung from the same parent stem. Indeed, observation goes far to prove that those of the female sex who are not exposed to depreciating influences can compete in strength and endurance with the men of their races. From such facts as these, logically reasoning, the human female, if properly developed and placed beyond conditions which might militate against her physical well-being, would in no degree be the inferior of the male. The present customs consonant with the age, in dress, exercise, and general hygienic details, seem to be the vice which tends to bring about this condition of "chloro-anæmia," with the result of a disordered menstruation and the scantiness of its normal flow.

Long ago Dr. Thomas A. Emmet pointed out the importance of not permitting young girls who were just coming into maturity to exercise their mental capacities at the expense of their physical capabilities. There is but little question that such advice was good; and instead of the young ladies of to-day being encouraged to engage in outdoor sports, very few have such opportunities, and I imagine that it would be wiser for them and their general health were they thus properly trained and instructed. Want of air and exercise in deteriorating the blood, enfeebling the two great systems of the body, the nervous and muscular, should be properly classed as two of the most important factors as causes for many of the menstrual disorders of the day. The necessity for the proper maintenance of these systems must be recognized, and the *mens sana in corpore sano* surely becomes essential to a healthy condition. Girls of tender age are required to apply their minds too constantly to master studies beyond their mental capacity, because of the so-called "progress of the times"—the results from such training being a rapid development of the whole cerebro-spinal nervous system, precocious talent, refined and cultivated taste, etc.; but on the other hand comes as a result the morbid impressibility that implants itself upon the generative organs. And added to this class of such functional uterine morbidities, among which is to be placed scanty menstruation, would naturally come the subject of the improprieties in the manner in which women clothe themselves. I can not better than express with Thomas, of New York, that the dress adopted by the women of our town may be graceful and becoming; it may possess the great advantage of developing the beauties of the figure; but it certainly is conducive to many menstrual troubles. The process of respiration is entirely done by the thoracic muscles; the diaphragm taking a most important part in the performance of this physiological process, the proper performance of this function must therefore be interfered with by the current custom of tight lacing. "The habit of contracting the waist in such a manner accomplishes what the surgeon does when he holds a broken rib in place by a snug bandage." Thus come many troubles to the pelvic organs, which lie in such close relation, and which must, therefore, partake of functional difficulties. In estimating the effects of direct pressure upon the position of the uterus, its extreme mobility must be constantly borne in mind. No more striking evidence of this fact can be cited than that as proved by the use of the Sims speculum in our usual examinations.

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* Read before the Medical Society of the State of New York at its eighty-eighth annual meeting.

Other causes might be enumerated as giving rise to this form of disordered menstruation, as imprudencies during the menstrual nisus, or after parturition, prevention of conception, or induction of abortion, etc. But time will scarcely permit of any particular discourse upon these subjects. Suffice it to say, that they remain unfortunately as factors of causation, and I am afraid before much improvement can be attained for their removal, a desire must first be cultivated in the minds of those who are the sufferers, and, as a rule, I regret to say that in my experience neither the desire nor the appreciation of the importance of such a subject toward the requirement of physical excellence sufficiently exists among the more refined and better class of the women of to-day.

Chloro-anæmia, as a physiologico-pathological condition, may and can well exist, resulting in scanty menstruation. As to climate and its influences upon this function (menstruation) one might say something, but the subject is so well known to us all that I shall refrain from speaking of it, except to mention it as an additional cause of the malady in question. Serious disease of the kidneys or of the lungs, as well as many of the zymotic troubles so frequently encountered, are also to be regarded as contributing causes toward disturbing the normal function of menstruation, often bringing about a scantiness of the flow, and even at times causing it to cease entirely. Often a leucorrhœal discharge at periodical intervals in women thus diseased takes the place of a normal flux, which subject has been thoroughly discussed by Dr. Currier, of New York, at different times before this society.

In my experience I can not say that I have met with other causes for scanty menstruation. It may be possible that many forms of uterine tumors or other pathological growths connected with this organ are productive of it, yet the most pertinent factors seem to me to be those as already cited, chloro-anæmia being the most prominent of all. With this in mind, therefore, it would appear from a purely physiological standpoint that treatment should be directed toward correcting, so far as is possible, this condition.

According to Virchow, chlorosis or chloro-anæmia is to be distinguished from leukæmia or leucocythæmia, in that the entire number of the blood globules is less. In leukæmia the colorless corpuscles seem to take the place of the red ones, and a true diminution in the number of the cellular elements in the blood is not produced. In chloro-anæmia the elements of both kinds become less numerous, without the occurrence of any disturbance in the numerical relation between these different corpuscles. This sage pathologist goes on to say further that "anatomical observations indicate that the foundation of chlorotic ailments are very early laid, for the aorta and the larger arteries are usually, and the heart and sexual organs frequently, found imperfectly developed."

To originate a new function, to bring to perfection a hitherto unexercised power, must make great demands upon the physical strength, and often, unfortunately, these demands are larger than are required for its continued activity. Numerous instances must come to our mind where, after menstruation has become fairly established, chloro-anæmia suddenly and unexpectedly makes its appearance, suppressing either partially or completely the flow. In many such cases emotion frequently plays an important part. Jealousy, disappointments of various kinds, especially those offending the affections—the *spretæ injuria formæ*—are often the immediate antecedents, which eventually result in impoverishment of the blood. Naturally, in the treatment of such conditions as described, iron as a remedy *par excellence* is the first suggestion that appeals to the physician, and such may be true—but, I might add, only in its timely and proper administration, which requires more judgment than is commonly shown—and from clinical experience I can well agree with Barnes that this drug is only tolerated after vascular excitability or irritability is assuaged; it *then* becomes readily assimilated. To bring about this result most satisfactorily is best done by the use of salines, and I have found that the old preparation of the liquor ammonii acetatis, when freshly made, fulfills the purpose most admirably. After the use of this or other salines iron can be given with most decidedly beneficial effects.

Electricity, too, as suggested by many, holds a most important place as a factor in the treatment of this disorder. Again I can agree with Dr. Currier's statement made before this society, that I fail to see much benefit arising from the use of manganese in any of its various forms. Other drugs might be mentioned, all useful in their way, in the treatment of this malady, each one having its champion to second its merits, but time will not permit at present of speaking further in this direction.

To summarize, then, I would say:

1. That scanty menstruation is most usually the result of malnutrition in both young and middle-aged women, married or single.
2. That the primary seat of this trouble lies in the condition known as chloro-anæmia.
3. That its treatment must be directed in an intelligent manner toward rectifying this condition.

And, lastly, that a persistent patience must be persevered in with the various forms of treatment laid down, if a permanent cure is to be expected.

The Medical Association of Georgia will hold its forty-fifth annual meeting in Atlanta on April 18th, 19th, and 20th, under the presidency of Dr. W. H. Elliott, of Savannah.

The Royal Academy of Medicine of Naples, we learn, has made Dr. J. Mount Bleyer, of New York, a fellow.

A NOTE ON THE
EMPLOYMENT OF NUCLEIN SOLUTIONS.

By JOHN AULDE, M.D.,
PHILADELPHIA.

Nuclein therapy possesses many attractions for the physician. The idea of administering a substance which shall stimulate cellular activity through the medium of the white blood-corpuscles or their nucleus is so closely associated with the vital processes that it becomes especially seductive to the physiologist and the clinician. Nuclein therapy, however, is not a complete therapy in itself; it is merely a branch or subdivision of cellular therapy, which is more comprehensive in its scope. Just as nucleins augment the nuclear activity of the leucocytes, thus increasing the antiseptic power of the blood, we have other remedies which enact a different rôle, as in the case of iron and phosphorus, both of which may prove useful to the organism by supplying it with some element that is wanting. Thus, liver "stimulants" are sometimes useful because they produce sufficient irritation of the hepatic cells to enable them to do more and better work.

Nucleins introduced into the blood perform a twofold function, since they possess distinct antiseptic properties, and besides they act as stimulants—that is, being poisonous or toxic, they irritate the protoplasm, whether coming into contact with it in the arteries, veins, or intercellular fluid. This double action is most marked when nuclein solutions are exhibited during a period of profound depression, or even that of moderate disability, due to a disorganized state of the blood, such as we see in anæmia and malarial toxæmia. In the latter class of cases I have noted marvelous changes occurring in the blood within a week, and sometimes even in the course of a few days. For example, the red corpuscles on first examination will exhibit a crenated appearance, with few or none having a round-like, normal contour; when dried, many of the red discs will be found broken or split, and not infrequently we shall be able to discover clear indications of malarial poisoning, with or without the vegetable micro-organism associated with that disease. In the course of a few days after beginning the administration of nuclein solutions large numbers of healthy corpuscles can be found in the field, and along with them a multitude of the unhealthy discs. When we consider the immense number of red blood-corpuscles in the blood of a healthy human being, estimated at two hundred trillions, we can form only a faint conception of the rôle played by so-called "blood medicines"—if they prove efficient.

In certain directions and under certain restrictions and limitations I am satisfied that nuclein as a remedial agent possesses powers far beyond any remedy ever introduced into medical practice, as the following brief reports will show. Indeed, it appears to be Nature's own remedy, and with it the clinician will be able to accomplish the most surprising results in the treatment of various diseases.

Case I. *Nasopharyngeal Catarrh, with Chronic Bronchitis.*—Harry, aged thirteen years, weight sixty-five pounds, was brought to me a few weeks ago from an adjoining State suffering from deafness, naso-pharyngeal catarrh, and chronic bronchitis, all of which is said to have resulted from an attack ot influenza which occurred in the early part of the winter. Upon holding a watch to the ear, it was impossible for the boy to hear it unless placed close to the head, although the nerve supply was intact. An examination of the external auditory meatus discovered inflammatory deposits along with impacted cerumen, and the effervescence which occurred when a small portion of hydrogen dioxide was added convinced me that the secretion was not healthy. The additional *local* treatment consisted in the application of dry aristol. There was an almost constant cough, hawking of mucus from the head, and the child had no appetite. Internal treatment for the first four days consisted in the administration of a fiftieth of a grain of potassium bichromate at intervals of two or three hours, so that five doses should be taken during the day. Under this treatment the condition of the ears improved as well as the nasal trouble, but there was no perceptible change in the condition of the bronchial apparatus.

On the fifth day of treatment nuclein solution was given in small doses at intervals of two hours, and not only produced a notable effect upon the appetite and digestion, but also upon the bronchitis. The father said, at the end of ten days, that the boy was then eating about three times as much as before, and further, that he had gained ten pounds in weight since beginning treatment. The hearing had so far improved that the patient could hear a watch at a distance of fifteen inches, the cough and bronchitis had subsided, and improvement was perceptible daily.

Case II. *Amygdalitis.*—Mrs. H., aged twenty-two years, had been suffering for two or three days from amygdalitis, which domestic treatment failed to relieve. The pulse was rapid, the temperature 100°; there were chilly sensations or "creeps" running up and down the back, and deglutition was painful. This patient began taking nuclein solution at once, a dose being administered at the office, and felt some relief from this dose. The remedy was continued at intervals of an hour, and after taking the sixth dose all pain and other disagreeable symptoms subsided (this was during the afternoon and evening), and the patient had a comfortable night. There was no further occasion for medication on the following day, and thus ended the attack. In previous attacks she had frequently been kept in the house for a week or more, and had used gargles freely of every imaginable description. I may add that I had attended this patient previously under the same conditions, where the results were equally satisfactory, and could give a long list of similar cases equally flattering as evidence that it was not a mere coincidence.

Case III. *Anæmia.*—Mrs. G., aged forty years, rather spare, was a patient some years ago, but for the past five years she has resided near London, England. When suffering from indigestion she derives benefit from a modified Fothergill pill, and last summer wrote, asking me to send her some of the black pills along with some little pellets which I had given her on one of her trips for seasickness. At the time of writing she said she was under treatment, or had been under treatment, for anæmia. With the package of medicine I inclosed some nuclein solution in the form of granules, telling her that if she had not fully recovered from the anæmia she might derive benefit from the little pellets.

To this letter, with instructions, the patient replied, October 29th, as follows:

"After writing to you I became much worse and my heart was terribly weak. Dr. E. wished me to consult Dr. De Haviland Hall, in London, as his opinion was, I must lie up entirely for a time, to give my heart a perfect rest. Dr. Hall entirely agreed, so I had to lie up for two weeks, and was treated with iron and arsenic. By the time your letter came I was much better and had made some blood. Two days after I was sent to the seaside, where I remained three weeks and derived much benefit, so I saved the granules until more needed. On my return I again became very pale, and my eyelids had not much color, so I commenced taking the medicine, and now write to tell you the result. After two or three doses I noticed a difference, and in a few days I had more blood than I ever remember. So it has proved a great success, and I am saving the remainder for another time."

Under date of January 24, 1894, this patient writes the following account of her further experience with the nuclein, although, of course, she does not know what she is taking:

"My object in writing is to ask for some more of the black pills for liver and indigestion and also some granules for anæmia. I find both benefit me more than any medicine I can obtain here. I have again been suffering from anæmic symptoms, and began taking the granules, and am now better. I have some left, but do not wish to be without them."

I forbear making comment on this, as the evidence is quite clear and conclusive, showing that the effects were produced without any hypnotic influence or suggestion on my part, as I only mentioned in the letter of instructions that, in case she had not fully recovered from the attack of anæmia, she might derive benefit from the use of the pellets, taken according to the directions.

Case IV. *Masked Malaria.*—Miss M., aged fifty years, has been suffering for a long time from some occult ailment which has resisted the most earnest solicitations of several competent physicians, as well as sanitarium treatment and travel. She suffers from alternate constipation and diarrhœa, is very nervous, and has sleepless nights, being usually unable to sleep before four o'clock in the morning. The appetite appears to be fairly good, but she lives principally on starchy foods; likes "grits" for breakfast, but wants her other foods highly seasoned. This condition has existed for several years, and, although she has periods when excessive languor takes possession of her, she has become quite philosophical about the matter. The sleepless nights are the most objectionable, although chloral, sulphonal, and other hypnotics and anodynes, she says, have failed to produce any apparent benefit. An examination of the blood under the microscope shows that there is not a single healthy red corpuscle in the whole field; they are crenated, broken, misshapen, and many of them appear to contain pigmentary deposits. The first examination was made with a one-fifth-inch objective, magnifying five hundred diameters, and the dry specimen, twenty-four hours later, with a one fifteenth-inch oil immersion lens, magnifying a thousand diameters, both examinations showing practically the same result.

After taking nuclein solution for three days, a second microscopic examination was made, when it was found that the perfect red discs had developed so that they existed in about the proportion of one good one to twenty or twenty-five poor ones. The patient meanwhile, with a regulated diet, had greatly improved; she slept very well the second night, and was able on the following day to go out and walk with comfort, and had more strength than for a long time. I may add that the patient is still improving and the number of healthy red corpuscles rapidly increasing, and there has been no more difficulty with the bowels.

Case V. *Malarial Toxæmia.*—Mr. B., aged thirty years, had an attack of malaria during the year 1881, and again in the autumn of 1889. Since the last attack he has suffered from muscæ volitantes. These spots can be seen by looking toward the light and have been constantly present for four years and a half.

There is no distinct history of malarial symptoms during the past few years, although, when closely questioned, the patient thinks he has days each week nearly when there is a noticeable languid feeling. The pulse-rate is 72, temperature 97·5° F., and there is no apparent evidence of miasmatic influence at the present time. An examination of the blood discloses that there is not a single healthy red corpuscle, all being crenated or broken.

Treatment by nuclein solution for six days produced no material change, except that the patient noticed that he had rather more free movements of the bowels, with considerable discharge of sulphureted hydrogen. He had also felt disposed to be a trifle more active than usual. A second examination of the blood showed that the number of healthy corpuscles was about in the proportion of one to ten, but there was a multiplicity of microcytes floating in the field when the specimen was fresh. I should have stated that at the first examination I found a number of spherical bodies, one flagellum, some crescentic bodies, and quite a number of corpuscles having indications of the presence or the effect of the action of the vegetable micro-organism found in the blood in malaria.

A third examination of the blood two days after that last described failed to discover any microcytes, the proportion of healthy corpuscles had perceptibly increased, and the patient said that for two days past the condition of the eyes had measurably improved, the floating spots being less distinct than formerly.

Whether a permanent cure will result from this treatment I am at present unable to say, but with the remarkable changes which have occurred in the blood in the short time mentioned (eight days) it does not seem unreasonable to anticipate favorable results from the treatment adopted. At the time of beginning treatment there was no doubt of the presence of malaria, and the rapid changes which have taken place in eight days being favorable, all lead to the same conclusion. In all clearly marked malarial cases coming under my observation since beginning the use of nuclein solutions, I have never known the remedy to fail in a single instance, and when we bear in mind that it is necessary to medicate no less than two hundred trillions of the corpuscles, it must be admitted that a little time will be required.

1411 Walnut Street.

THE OCCLUSION OF THE POST-NASAL SPACE BY SYPHILITIC ADHESION.

By E. HARRISON GRIFFIN, M. D.,
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The subject of this paper has received little attention from the hands of practicing laryngologists. The cases have rather been ignored and the adhesions have been looked upon as something the hand of the surgeon had better leave to the care of Nature.

Cohen reports one case in his book. Bosworth takes up the subject more thoroughly and gives some interesting statistics of cases that have been reported.

I reported in the *Medical Record* of January, 1888, a case in which I had operated for this deformity. I saw my patient five years after my operation; the opening I had made had remained open, and his voice, which had been lost for two years previous to the surgical interference, was clear and loud.

The statistics of twenty-two of these cases that I have collected are as follows: Adhesion of the palate occurred to the pharynx by syphilitic ulceration in one case fourteen months after the initial lesion, in three cases two years, in five cases three years, in eight about the fourth year, in two the sixth year, in one the seventh year, in one the tenth year, and in one the fourteenth year.

Complete occlusion of the nares by syphilitic adhesion occurred in three cases, adhesion of the palate to the pharynx with the uvula free in two cases, loss of the uvula and adhesion of the palate to the pharynx with a small opening into the post-nasal space in seven cases. The remainder I will classify as simple adhesions.

One side of the palate may be destroyed more than the opposite side; in these cases the adhesion will be higher up and give the palate the appearance as if it sloped to the side of the lesser destruction.

This deformity is generally the advent of tertiary syphilis. I can refer to five cases that have occurred in my practice where the uvula was lost and adhesion occurred by ulceration, due to inherited syphilis.

The resulting deformity was the same as occurred by the syphilitic ulceration.

One case that came under my notice in an adult with this adhesion gave a history that pointed to gangrene of the palate and pharynx as the cause of the trouble.

The swallowing of a strong caustic, if the patient survived the ordeal, might be a factor in producing this deformity.

The adhesion is due to the syphilitic ulcer that forms on the palate and pharynx. Both of these must participate in the ulceration to produce an adhesion. Two raw or denuded surfaces must be brought together before this malformation can occur.

I have had cases where the ulceration extended from one pillar of the fauces to the other and as low as I could see down the pharynx, and where the ulceration ran high up into the post-nasal space, recover without any adhesion, simply because the pharyngeal surface of the palate was not involved in the ulceration.

To have the ulceration confine itself to the pharynx or the palate alone is very rare. The surfaces are brought together so often in nasal breathing and in the act of deglutition that an ulceration beginning on one of the parts quickly infects its neighbor, and means, if it is not quickly arrested, a destruction of tissue and perhaps a partial or complete adhesion of the palate to the pharynx.

I know of nothing more insidious or more liable to be passed over than a syphilitic ulceration occurring in the vault of the pharynx or behind the palate. The symptoms point to everything but a syphilitic ulceration.

The nose is generally occluded, and presents upon examination the appearance of a hypertrophic or an acute rhinitis.

The patient is generally affected with a cough produced by the discharge from the ulceration dropping down into his larynx. This symptom is liable to be mistaken for a bronchitis, and the true trouble only recognized when the ulceration has made extensive progress. The diagnosis is easily made by the rhinoscopic mirror, or in some cases the ulceration can be seen by lifting the palate up with a probe.

Pain is very seldom a factor in these cases. A slight headache and fever may be present, produced by the acute rhinitis that generally accompanies syphilitic ulceration of the palate or the pharynx.

The absence of pain is the reason for the great deformities that are so often seen in this region. The patient treats his cough with some home remedy, and only applies for treatment when he notices some defect in his speech or a difficulty in swallowing.

Vomiting may be present, produced by the constant irritation and tickling in the throat from the discharge from the ulcer.

I had one case where the vomiting had lasted three weeks before I saw the case. The patient vomited everything that she swallowed. Even milk she could not retain on her stomach. I cleaned the ulcer and gave her direction how to do it at home. At the next visit she reported that the vomiting had ceased after I had treated her throat, although I had started her on thirty grains of iodide of potassium, with directions to increase at each dose.

The quicker the patient is brought under proper internal medication the better. The iodide of potassium, given in large doses in plenty of water on a full stomach, will generally obtain control of the disease in twenty-four to forty-eight hours. The ulceration yields readily to treatment, but large doses of this drug are generally indicated in this stage of the disease.

I have controlled an ugly ulceration in one case with ten grains of the drug, while in another I have given two drachms four times a day before I could make any impression on the ulceration.

The quicker the ulceration is healed, the less the deformity. With this idea in view, anything that will help healthy granulation to form, should not be overlooked.

Local treatment is very important. I place the lotio hydrargyri nigra, diluted a fourth to a half, at the head of the list as a wash or a gargle in this affection.

Peroxide of hydrogen, diluted with water a fourth or a sixth strength, is an excellent preparation to clean off these ulcers. Dobell's solution or Seiler's tablets form a useful cleanser.

After the parts have been thoroughly cleaned, both in the throat and the post-nasal space, a little albolene oil can be sprayed in, followed by iodoform, aristol, or europhen, the latter forming a perfect unguent over the part.

At times, even with the closest care, when the ulceration has been extensive, an adhesion of the palate to the pharynx is hard to prevent. In some cases I have been able to break up the adhesion with the little instrument I shall describe presently.

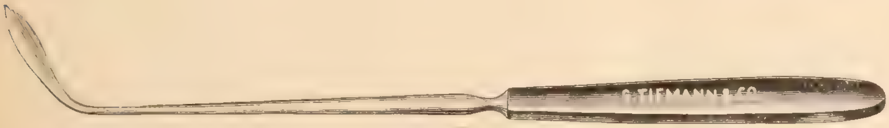
An operation is generally best even for a partial adhesion. Dilatation is slow and uncertain.

In an operation on this deformity of the palate try and save as much tissue as possible, yet make the opening large and generous, remembering that the two ends are liable to unite by granulation.

A silver probe bent and covered with cotton, passed through the nose down between the palate and pharyngeal adhesion, will give the point for operation.

I use a curved knife made for me by Tiemann. I give a picture of it below. It is sharp at the point and on both sides, so it can be made to cut either from right to left or *vice versa.*

Before operating cleanse the nose thoroughly of any mucus or crust formations; this applies also to the pharynx. Spray into the nose a four-per-cent. solution of cocaine and touch the cicatricial tissue in the pharynx with a twenty-per-cent. solution till the parts are well under the anæsthetic. If this is done thoroughly, the operation is painless, and if ten grains of quinine have been given for three nights previous to the operation, the hæmorrhage is slight and easily controlled.



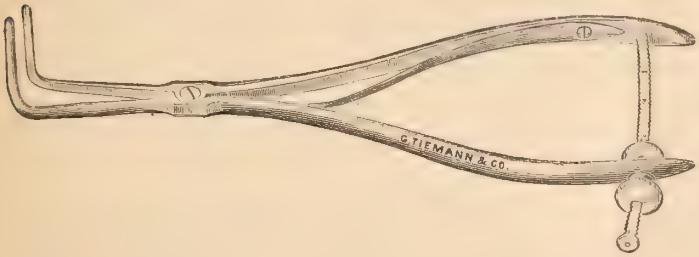
Introduce the knife well between the cicatricial binding and carry it as high as it will go; then turn the instrument down, so it will cut from the upper surface of the adhesion to the lower point of resistance. Cut well toward the pillars of the fauces and see that the edges of the palate are freed from the pharynx.

If there is an adhesion of both sides, repeat the operation on the opposite side.

A little chromic acid on a probe, applied to the cut surfaces, will often prevent them from reuniting. It will also even the edges.

If any ragged edge should be left, it can be easily trimmed with a pair of curved scissors. Do not try to remove any crust that may form upon the cut surfaces when the healing process begins. A crust will prevent the parts from reuniting, especially if the patient is under syphilitic treatment

I advise my patient after the operation to buy the instrument that is pictured below. It was made for me by Tiemann & Co. and can be easily manipulated by the patient.



The blades are introduced behind the palate and pressure on the handle will separate the blades so they will dilate the parts from a fourth of an inch to an inch and a half. The distance is adjusted on a graduated bar across the handle. This instrument should be introduced after the fifth or seventh day after the operation, about twice or three times a week for a month, then about once a week, to keep the parts from reuniting. It is known in the stores as my palate pharyngeal dilator.

It is a simple contrivance and in my hands has produced good results in this class of cases.

The operation is easy, the discomfort arising from the obstruction to nasal breathing is eliminated, and the palato-pharyngeal space can be re-established by this little instrument.

112 West Forty-fifth Street.

A PECULIAR CASE OF MORPHINE IDIOSYNCRASY,

WITH UNUSUAL SYMPTOMS.

By M. ELEAZARIAN, M. D.

Mrs. C., aged twenty-six, of nervous temperament, previous health good. Suffering from great shock and prostration. Sciatica with severe pains generally, resulting from injuries received by having been thrown from one of the surface cars in this city. Three days after this injury I gave her a hypodermic injection of a quarter of a grain of sulphate of morphine with a one-hundredth of a grain of sulphate of atropine to relieve her sciatic pains. I remained with the patient fifteen minutes after the injection and then left her feeling quite comfortable, but as yet she had not experienced the effects of the drug thus injected. In twenty minutes after (from the time I left her), I was hastily summoned to my patient. On my arrival, I found her in a cold, clammy perspiration, the pupils contracted to the size of a pin's head, respirations from five to eight a minute, and in a heavy stupor; there were frothing at the mouth and spasmodic contractions of the muscles of both arms and opisthotonus. After I had applied the usual means of restoration and of arousing the patient, she complained of great dyspnœa and noises in the head resembling, as she said, the waves of the ocean. Remaining with the patient long enough to feel that she was entirely out of danger, I left her.

On my next visit in the morning, ten hours after, she felt as well as ever, complaining of great exhaustion only.

106 East Twenty-fourth Street.

Examinations for the Army Medical Corps.—The surgeon general has issued the following circular: "In view of the possibility of the reduction of the medical corps from a hundred and twenty-five to ninety assistant surgeons, by action of Congress at its present session, and to save possible loss of time and expense to candidates if such action be taken, the examinations appointed for March and April, 1894, will, by order of the Secretary of War, not be held until further notice. It is probable that, if the corps should not be reduced, the examining board will be convened in the fall of 1894. Of this, notice as early as possible will be given."

Change of Address.—Dr. Edward B. Coburn, to No. 329 West Fifty-eighth Street.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, MARCH 24, 1894.

BRONCHITIS IN INFANTS.

This important subject was discussed at a meeting of the Section in Pædiatrics of the New York Academy of Medicine held on March 8th. Dr. William H. Thomson spoke of the numerous peculiarities which this disease presented during the first few months of life. It usually started, he said, from some exposure of the surface of the body. Wetting of the back of the neck was especially apt to be followed by pharyngitis with secondary bronchitis. Children who perspired freely about the head and neck during sleep were particularly prone to bronchial catarrh. One of the chief means of prevention consisted in sponging the neck with cool salt water at bedtime and protecting it from cold during sleep. The younger the child, the more serious was the disease. This was due largely to the very small relative muscular strength of the infant, the expiratory muscles being especially feeble. The respiratory passages, especially the pharynx, readily became clogged therefore, and the difficulty was thus greatly increased. The mechanical effort of breathing was an important factor in reducing the strength of the child, and sudden physical collapse was not uncommon. Special attention should be directed, therefore, toward keeping the bronchial passages clear. An "expectorant" cough should be encouraged. Such a cough should be carefully distinguished from a "non-expectorant," or irritant, cough. An "expectorant" cough should not be discouraged, but sedatives might properly be given to control an irritant element.

In a paper on the management of bronchitis in infants under a year of age, Dr. Charles G. Kerley referred to the importance of loosening the bands and clothing, that the child might have perfect freedom in breathing. The position should be changed frequently to prevent the gravitation of fluids into dependent portions of the lung. General baths and packs were not indicated, but tepid sponging might be employed to advantage, especially if there was slight fever. Dyspnœa with hard, tight cough might often be relieved by a mustard bath at 100° F. If the disease became deep-seated, with rapid breathing, cyanosis, and dry cough, the use of the steam spray, either plain or medicated, would aid materially. It might be used for fifteen minutes every hour or even more frequently. Counter-irritation to the chest was the most important of all measures of treatment in young infants. Camphorated oil, applied with considerable friction, might be all that was required. A mixture of camphorated oil, turpentine, and aromatic spirit of ammonia was especially serviceable. In more severe cases a mustard paste proved more efficacious. One part of mustard was combined with five parts of flour. It was spread between two pieces of muslin and might be left from ten to thirty minutes. Its application might be repeated two or three times a day, and in severe cases more frequently, until the skin became sensitive.

In few conditions was the relative importance of local measures so great as compared with drug treatment. Castor oil, in doses of from three to five drops every two hours, sometimes had a decidedly good effect. A tablet containing a minute dose of tartar emetic and ipecac might also prove of value. If it was desired to produced emesis, fifteen drops of wine of ipecac might be given every fifteen minutes. For irritability and restlessness, small doses of potassium bromide and chloral were admissible, or a very small dose of Dover's powder. The administration of the ordinary sweet and nauseous cough mixtures did great harm by clogging the bronchial tubes and disturbing the digestion. Their use should not be tolerated.

THE ACADEMY OF MEDICINE'S NEW NATIONAL SANITATION BILL.

Several weeks ago we felt constrained to express our disapproval of a bill that had been prepared by the National Quarantine Committee of the New York Academy of Medicine, and been introduced into Congress, looking to the establishment of a national board of health. The committee itself seems now to have felt that the bill was objectionable, for it has prepared a new one that differs radically from the first. The full text of the new bill will be found on page 378 of this issue of the *Journal*. Substantially, this new bill meets with our approval, but there are a few matters of detail that we think ought to be set straight.

It will be observed that section 9 puts the matter of maritime quarantine into the hands of the Secretary of the Treasury —that is, by plain implication, into those of the Marine-Hospital Service, where it properly belongs, for it is not to be supposed that the Secretary of the Treasury would or could manage it in any other way. In view of the excellent work that has been done by the members of that corps, we think it would have been graceful and decorous to mention the corps in this section of the bill. We are informed, indeed, that that was done in the original draft, but that the passage was afterward taken out simply because it seemed to be unnecessary.

Section 22, we think, should be made a little more specific. If the bill were to become a law with that section in its present state, there would be nothing to restrain the commissioner of public health from spending the considerable sum of $1,075,000 within an hour after the organization of the bureau, in case he was so disposed.

MINOR PARAGRAPHS.

RETROPHARYNGEAL ABSCESS.

At the Section in Orthopædic Surgery of the New York Academy of Medicine two papers were recently read on Retropharyngeal Abscess and its Treatment, by Dr. Berg and Dr. Townsend. Dr. Berg divided these abscesses into two forms—the acute and the chronic—and said that the latter were due to disease of the bodies of the cervical vertebræ and of the intervertebral discs. In both forms the cavity of the pharynx was encroached upon so as to cause a gurgling, nasal voice, and to impede respiration. The acute form was accompanied with pain, and the swelling was situated more or less superficially and should be opened by an incision in the posterior wall of the pharynx. In the chronic form, due to Pott's disease of the vertebræ, the collection was situated beneath the anterior common ligament of the vertebræ and the prevertebral fascia, which were difficult to burrow through and guided the pus behind the carotid vessels to the posterior triangle of the neck. Treatment must be directed to both the disease of the vertebræ and the abscess itself. Rest in the recumbent posture and immobilization of the neck by suitable apparatus were indicated for the bone disease. The danger of hæmorrhage or of œdema of the glottis resulting on account of the position of the abscess indicated its immediate evacuation, whatever might be the views entertained in regard to opening cold abscesses in general. For many reasons an external opening, on either the anterior or the posterior border of the sterno-cleido mastoid, was to be preferred; but when this was impracticable an opening might be made in the pharynx by means of an aspirator, a trocar and cannula, or a guarded knife. Of these means the aspirator was preferable, and the cavity of the abscess might be washed out with a solution of iodoform in oil or ether.

THE GERMICIDAL ACTION OF GALLANOL.

A recent number of the *Lyon médical* contains the report of a series of exhaustive experiments by MM. P. Cazeneuve, Rollet, and Nicolas to ascertain the germicidal value of gallanol. The action of the drug was tested on five microbes, that of anthrax, the *Staphylococcus aureus*, the *Bacillus pyocyaneus*, the Eberth germ, and the *Bacillus coli communis*. The experimenters arrived at the conclusions that gallanol in excess completely destroyed the vitality of the micro-organisms, that in a relatively weak solution their development was diminished, and that in an attenuated solution, while their growth was not materially affected, their pathogenic powers were destroyed. It was shown that the drug was an invaluable remedy in the vegetable parasitic diseases; while destructive to the micro-organisms, it was perfectly non toxic to the general system. Gallanol possessed such active germicidal properties that there was no doubt that it could be employed with great benefit in the infectious diseases as an abortive remedy.

THE SAN FRANCISCO MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The committee of arrangements for the forthcoming meeting, of which Dr. R. H. Plummer, of San Francisco, is the chairman, has very properly issued a circular setting forth some of the beauties of that city. We can bear testimony that they are not overdrawn in the circular, and we hope it will reach every member and delegate, for there must be many members of the medical profession in the United States who have no adequate conception of the Golden City's attractiveness. Every one who can go to San Francisco to attend the meeting should do so.

THE HOAGLAND LABORATORY, BROOKLYN.

The annual course of post-graduate drill in microscopy and pathology is now in progress at this institution. It will continue until April 15th, at which time the course in bacteriology will be resumed, to continue until June 1st. These courses are under the direction of Dr. J. M. Van Cott and Dr. Ezra H. Wilson.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Burêau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 20, 1894:

DISEASES.	Week ending Mar. 13.		Week ending Mar. 20.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	0	0
Typhoid fever	11	5	11	3
Scarlet fever	129	18	178	12
Cerebro-spinal meningitis	0	0	0	0
Measles	387	27	331	23
Diphtheria	167	44	200	41
Small-pox	23	3	28	8

The Death of Dr. Albert C. Stanard took place on Monday, the 19th inst., at the New York Hospital, where a few days before he had been operated on for a recurrent attack of disease of the vermiform appendix. The deceased was at one time a member of the house staff of the hospital.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 11 to March 17, 1894:*

Fisher, Walter W. R., Captain and Assistant Surgeon, is granted leave of absence for six months, to take effect on or about May 1, 1894, with permission to go beyond the sea.

By direction of the President, the retirement from active service, March 13, 1894, by operation of law, of Bartholf, John H., Major and Surgeon, under the provisions of the act of Congress approved June 30, 1882, is announced.

Straub, Paul F., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Riley, Kansas, and ordered to report in person to the commanding officer, San Carlos, Arizona, for duty at that post, relieving McVey, Harlan E., First Lieutenant and Assistant Surgeon. Lieutenant McVey, on being relieved by Lieutenant Straub, will report in person to the commanding officer, Whipple Barracks, Arizona Territory, for duty at that post.

A board of officers, to consist of Greenleaf, Charles R., Lieutenant Colonel and Deputy Surgeon General; Hartsuff, Albert, Lieutenant Colonel and Deputy Surgeon General; and Pope, Benjamin F., Major and Surgeon, is appointed to meet at the call of the president thereof, at San Francisco, Cal., for the examination of Hall, William R., Captain and Assistant Surgeon, with a view of determining his fitness for promotion, as contemplated by the acts of Congress approved October 1, 1890, and July 27, 1892. Captain Hall will report in person to the president of the board for examination at such time as he may designate.

Society Meetings for the Coming Week:

Monday, *March 26th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *March 27th:* New York Dermatological Society (private); Buffalo, N. Y., Obstetrical Society; Medical Society of the County of Lewis, N. Y. (quarterly); Boston Society of Medical Sciences.

Wednesday, *March 28th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American

Microscopical Society of the City of New York; Metropolitan Medical Society (private), New York; Auburn, N. Y., City Medical Association; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society; Berkshire, Mass., District Medical Society (Pittsfield).

Thursday, *March 29th:* New York Academy of Medicine (Section in Obstetrics and Gynæcology).

Letters to the Editor.

CHROMOGENIC BACTERIA.

Boston University Medical School, *March 7, 1894.*

To the Editor of the New York Medical Journal:

Sir: In the issue of the *Medical Journal* for March 3, 1894, Dr. Ager describes an interesting species of bacillus which is chromogenic in the presence of glucose. Last July I observed this same phenomenon in connection with *Bacillus cyanogenus*, the bacillus of "blue milk." This bacillus is common in north Germany and elsewhere in Europe, causing epidemics of blue milk, but under successive cultivations in the laboratory soon loses its power to produce the color. It is also said that comparatively new cultures rapidly deteriorate in this respect in America.

In agar or gelatin tubes, when glucose is present, a striking pale-indigo blue color appears directly below the growth, and the growth itself often becomes of a steely metallic blue. I have not observed any tubes in which the color was complete throughout, and in many it extends but a little distance beyond the growth. A few experiments, substituting dextrose and levulose (sugars in the same group) for glucose, gave the same result, but with lactose chromogenesis does not occur.

In the presence of glycerin a rather characteristic brownish color is formed, but in a much longer time. The blue color with glucose generally appears within a few days, but I have known it to be a week and even longer in coming, and in one case to have failed entirely.

The value of glucose in the determination of species is only just beginning to be appreciated. Further study will probably show many more species which spontaneously produce color in its presence. There are valuable acid reactions shown by litmus or other indicators. Gas formation in "Smith tubes" is another important species-characteristic.

I can see no reason why glucose should not be added to gelatin for plating purposes in order to distinguish those species which produce color in its presence, though as yet too little is known of its reactions to do more than suggest this and wait until all the species one is likely to meet with have been studied in connection with it. Marion Hamilton Carter.

Proceedings of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of February 6, 1894.

The President, Dr. M. Allen Starr, in the Chair.

A Portable Air-tight Alcohol Lamp.—Dr. William M. Leszynsky exhibited such a lamp, made of metal, which he stated he had found very serviceable in applying cupping glasses. It also served all the purposes of a spirit lamp. The ordinary methods of applying the cupping glasses were very annoying and sometimes painful to the patient. In the cups with the rubber bulbs the rubber was apt to get hard and crack.

Electrical Reactions and their Value in Diagnosis and Prognosis.—The President said that he had seen statements from various sources, some very dogmatic and others skeptical, in regard to the value of electrical tests as an aid to diagnosis and prognosis in various forms of nervous disease. A careful review of the literature of nervous diseases would reveal to any one that most men who had written books on this subject had gone right back to Erb's original article, published in 1872, in the first edition of von Ziemssen's *Cyclopædia*, and had recopied Erb's diagrams and statements. Individuals who had had many opportunities of making electrical tests had noticed from time to time that their results did not correspond with the statements laid down by Erb. Their results, however, were not made public, or else they tried to explain them away, as if there were something wrong with them. A discussion on this subject, therefore, would be very timely.

Dr. C. L. Dana opened the discussion and took up the subject of the value of electrical reactions in spinal lesions. In connection with this subject he had particularly studied a certain number of cases in which he had been able to test the reactions many times in the course of the disease. The tests had been made in cases of anterior poliomyelitis, progressive muscular atrophy, and bulbar palsy, also in one or two cases of facial palsy and locomotor ataxia.

It was absolutely necessary, Dr. Dana said, in making any comparative statements about results, that we should understand how the reactions had been taken by each observer and what he meant by reaction of degeneration. The reactions were subject to such variability, and it was so easy to deceive one's self, that the operation required an extremely judicial state of mind and great care. In the tests made by himself, he had employed an indifferent electrode, of about the size specified by Erb; this was to be tied down, not held by the hand, so that there were no variations in the amount of pressure. For the active electrode he had employed a small pointed electrode the surface of which measured one square centimetre. By means of this one could get the muscular irritability at different parts of the muscle, could see whether the contractions were sluggish or not, and could also learn the diffusibility of the contraction, which was a form of reaction that had not been sufficiently noted. If an electrode with a large surface was employed the diffusible reaction was not brought out with any certainty. The small pointed electrode could also be shifted to the motor point of the nerve, and thus the nerve reaction be obtained. In some cases the strength of the current required was so great that the point electrode gave rise to too much pain; in such a case he employed the ordinary-sized electrode. The electrode was first placed on the body of the muscle and reaction obtained with a gradually increasing current, and then the same reaction with a gradually decreasing current. These reactions were compared with those on the opposite side and the operation repeated two or three times with a proper interval between to allow the muscle to rest.

The three points that he had particularly investigated in connection with spinal lesions were: First, the relative irritability of the two poles; second, the character of the reactions—*i. e.*, whether they were sharp or sluggish, or sluggish and diffuse; and third, the course of the variations of the reactions in the different stages of the disease.

With regard to the relative irritability at the positive and negative poles, many of the recorded cases merely showed that the cathode exceeded the anode in eliciting irritability, without giving the exact number of milliampères required to produce contractions. Dr. Dana said he considered this an inaccurate method of making the measurements. In all reports it should be carefully put down how many milliampères were necessary to produce a positive-pole contraction, and then a negative-pole contraction, or *vice versa*. In this way, by following the course of the disease, we should find that each pole had a definite course of increased and decreased irritability in accordance with the progress of the disease. The speaker exhibited a number of diagrams which he had prepared, showing the course of the polar irritability in several cases of progressive muscular atrophy, in two cases of anterior poliomyelitis, and in one case of double facial palsy; in the latter case he had been able to make daily examinations of both sides of the face for a number of weeks. His observations went to show that there was a difference between the course of the polar irritability in neuritis and that in progressive muscular atrophy and poliomyelitis. In neuritis there was a pronounced steady rise in the polar irritability, while in the spinal lesions it was very slight or absent. So far as his observations went, there was a true degenerative reaction in progressive muscular atrophy, as there was in poliomyelitis, but it was only observed in certain stages of the disease. In all the descriptions of electrical degenerative reactions it was stated that in normal muscles and in partly degenerated muscles the reactions were sharp and quick, but that when the muscles became degenerated the reactions were sluggish or vermicular. Further than this, with the point electrode there was a diffuse contraction of the muscle—*i. e.*, the whole belly of the muscle and even the adjacent muscles would contract. This diffusibility of the contraction Dr. Dana said he considered equally important with the sluggishness, although it did not always take place. It was better seen with the anodal contraction. In conclusion, Dr. Dana thought we had to revise many of our views of reaction of degeneration, but it was too soon to formulate new views.

Dr. W. M. Leszynsky continued the discussion, confining his remarks more particularly to the value of electrical reactions in cases of traumatic neuritis. His method of making the examination, he stated, was very similar to that outlined by Dr. Dana. The conclusions drawn by him were as follows:

1. The value of electricity as an accessory method in diagnosis and prognosis of disease of the peripheral nerves is not so universally recognized as its importance demands.

2. The result of this procedure often furnishes corroborative and conclusive evidence where only a provisional diagnosis has been made.

3. The necessary technical skill in successfully pursuing such investigations and correctly interpreting the result can only be acquired through special study and practice.

4. The use of the faradaic current alone is quite sufficient for diagnostic purposes.

5. As a rule, the galvanic current is supplemental to the faradaic, and in the absence of faradaic irritability in nerve and muscle it is of the greatest service in prognosis.

6. The discovery of the reaction of degeneration is not an essential feature in the diagnosis as to the situation of the lesion.

7. The peripheral nerve fibers possess an inherent power of regeneration which seems almost unlimited, the length of time required for the completion of the regenerative process varying from a few weeks to seven years or more. Therefore, in severe forms of injury, the cause, degree, and character of damage to the nerve are often of greater importance in prognosis than the demonstration of the reaction of degeneration.

8. The presence of reaction of degeneration, or partial reaction of degeneration, is not incompatible with the preservation of motility in the same area. This paradoxical condition has been found in cases of lead poisoning and a few others, but thus far the cause has been inexplicable.

9. Strong currents are only rarely necessary. The weakest current that will produce a distinctly perceptible reaction is all that is requisite.

10. A decrease or disappearance of faradaic irritability in nerve and muscle simply denotes an interference with the nutrition in the course of the motor tract between the multipolar cells in the anterior horn and the peripheral nerve distribution. It does not enable us to judge of the nature of the pathological process.

11. The character of the reactions does not differ, whether the lesion is situated in the cells of the anterior horn, the anterior nerve roots, the nerve trunks, or their ultimate distribution. The same rule holds good in reference to the various cranial motor nerves and their nuclei, such as the facial, hypoglossal, and spinal accessory nerves.

12. When the farado-muscular irritability is lost, no reaction can be obtained by a rapidly interrupted galvanic current.

13. The secondary current from an induction coil is the one generally used in testing faradaic irritability. Owing to its high electro-motive force, the resistance encountered in the moistened skin may be disregarded.

14. The difference in the poles of the faradaic current is only a relative one, and can not be determined by the usual tests as applied to the galvanic current. The electro-motive force in the secondary coil is greater at the "break" than at the "make." The electrode that is felt to be the stronger in its action is usually considered as the negative or so-called "faradaic cathode."

15. In some apparently healthy individuals the musculo-spiral nerve fails to react to strong currents applied with the "faradaic anode," while a comparatively weak current from the "faradaic cathode" calls forth a quick response.

16. In a case of undoubted peripheral paralysis the faradaic irritability may be preserved, but it almost invariably requires a stronger current to produce muscular contractions than upon the healthy side (quantitative decrease). [Dr. Leszynsky said he had never seen a case where this could not be demonstrated within a few days after the onset of the paralysis.]

17. The character of the muscular reaction demands attention. A slow and labored contraction associated with decrease in faradaic irritability denotes degenerative changes.

18. The faradaic irritability may return in persistent cases of peripheral paralysis without any perceptible improvement in motility.

19. Electro-diagnosis is inapplicable in paralysis of ocular muscles.

20. When the farado-muscular irritability is lost upon skin excitation, its presence may be demonstrated in the muscle for a longer time by means of acupuncture.

21. If electricity is to be of any service in ascertaining whether the nerve trunk has been divided or not, as a result of traumatism, the examination must be made as soon after the injury as possible. We can then determine at once if specia surgical interference is necessary. Should two or three weeks elapse before such examination, it will be impossible to state whether the absence of reaction is due to traumatic neuritis or to complete division of the nerve. Exploratory incision would then be called for.

22. The tests with the galvanic current require adequate

apparatus and a working knowledge of the relationship between electro-motive force, resistance, and current strength. It also requires much time, patience, and perseverance; hence its unpopularity.

The **PRESIDENT** spoke of the value of electrical reactions in cases of multiple neuritis. He reviewed the conclusions of Nothnagel, Pal, Gowers, and others on this subject, and gave the histories of a number of cases of multiple neuritis that had come under his observation. The first case reported was one of general alcoholic multiple neuritis, with total paralysis in both arms and both legs. In this case, within two months after the onset, when the paralysis was extreme and when no voluntary movement was possible in the muscles of the arm, forearm, or hand, the electrical reactions had differed completely in these localities. In the arm there was a diminution of response to both currents without polar changes; in the forearm there was a loss of faradaic response, with diminution of galvanic response, without polar changes; in the hand there was loss of faradaic response, with diminution of galvanic response and polar changes.

In two other cases of alcoholic multiple neuritis very great variations were present in muscles which were equally paralyzed. In a case of diphtheritic paralysis there was a total loss of contractility to faradaism, but there were no polar changes to the galvanic current. In another case of diphtheritic multiple neuritis, in which ataxia rather than paralysis was a marked symptom, an interesting fact was noted. There appeared to be a slight weakness in the right supinator longus muscle. The electrical reactions of this muscle, however, were found to be normal, the reaction to faradaism being prompt and the cathode-closure contraction greater than the anode-closure contraction. For purposes of comparison, the left supinator longus was simultaneously tested, there being no voluntary paralysis of this muscle whatever. It was found that the reaction to galvanism in this muscle showed polar changes, the anode-closure contraction being greater than the cathode closure contraction, although there was no reduction in the faradaic response. Here, then, was an observation which confirmed Pal's statement that electrical changes were sometimes present in muscles that were not paralyzed.

Every possible change to electrical reactions might be present in muscles affected in the course of multiple neuritis. The conclusion was inevitable, therefore, that to the electrical changes no very great diagnostic significance could be assigned. In the cases cited there was no parallelism between voluntary power and electrical condition. Voluntary power in all the cases seemed to return before the electrical reactions became normal. Therefore we could not project a reaction line upon a chart into the future and say that at a certain date, when the electrical reactions became normal, the voluntary power must necessarily return. Electrical reactions, while of some interest, were not to be taken as of great importance in the diagnosis of multiple neuritis.

Dr. B. **SACHS** discussed the value of electrical reactions in dystrophies. In regard to the general subject of reaction degeneration, the speaker said he had been forced to the conclusion that there were only two points of value. The first and most significant feature of reaction degeneration was the loss of faradaic response. The second was the sluggishness of the contraction. The variability between the anodal and cathodal contraction was extremely great, and he had long since abandoned the idea that the relationship between the two could be utilized in all cases for the purpose of either diagnosis or prognosis. Physiologists had demonstrated with considerable plausibility that the electrical excitation of nerves and muscles depended largely upon the rapidity and succession of single shocks. In muscles in which the faradaic contractility seemed to be absent, if the interruptions were diminished, one could often get a contraction, whereas one would not get it with the ordinary faradaic machines in use. Dr. Sachs said he believed that reaction degeneration was present in any given case if the faradaic response was absent. He agreed with Dr. Dana regarding the variations in polar irritability in different stages of anterior poliomyelitis and other diseases. In Erb's diagrams, which had been so extensively copied, he did not distinguish between anodal and cathodal response. He made no distinction between the two poles. Dr. Sachs said he had found the greatest possible variability in the action of the two poles. In many cases, particularly in peripheral-nerve palsies, he had found that the cathodal excitability was increased as long as the disease lasted. After full power had returned the faradaic excitability might still be diminished or lost for a period of time varying between several weeks and a year. In exceptional cases the faradaic response remained normal from beginning to end, but the galvanic changes were pronounced.

The speaker said it was well to divide muscular dystrophies into two classes—namely, primary muscular dystrophies and the spinal amyotrophies. In the pure dystrophies we rarely got a definite reaction degeneration—*i. e.*, there were rarely entire absence of faradaic response and marked sluggish reaction, except in the very last stages of the disease, when so little muscular fiber was left that we could not expect to get either faradaic or galvanic response. In primary muscular dystrophy, therefore, there was no typical reaction of degeneration. In other than primary muscular dystrophies we got a very strong resemblance to the typical reaction degeneration. In progressive muscular atrophy of spinal origin, reaction of degeneration might be present in its entirety; but we often found partial reaction of degeneration and other irregular types of electrical reaction.

As regarded the value of electrical reactions in diagnosis and prognosis, Dr. Sachs said he was fully in accord with the statements made by the previous speakers. He still believed that Erb's observations were extremely well founded and held good in the majority of cases. It was certainly true that if the faradaic response—in the case of facial paralysis, for instance—was never lost, in nine cases out of ten recovery would be more prompt than where it was lost. That the faradaic irritability returned in some cases before the power, as maintained by Dr. Leszynsky, was, he thought, exceptional, to say the least. It was much more certain that the power returned long before the faradaic response did in the vast majority of cases.

As regarded the value of electricity as a means of prognosis in cases of muscular dystrophy, the speaker thought it was very slight. The senses of sight and touch would teach us much more than the electrical examination in such cases. By the degree of response to the faradaic and galvanic currents we could get some idea as to the condition of each individual muscle, but no definite conclusions could be drawn. In some cases of typical muscular dystrophy certain muscles unquestionably did recover; others did not. In the cases where the muscles did recover, the electrical reactions did not undergo any decided changes.

Dr. A. D. **ROCKWELL** said he agreed with Dr. Sachs that the main importance of electricity as an aid to diagnosis was in connection with the absence or presence of the faradaic reaction. The importance of this subject to the general practitioner had been impressed on his mind by a case that had recently come under his observation. The case was one of facial paralysis, and the patient had been under the care of a general practitioner who had treated him with the faradaic current for seven weeks without any benefit. Under the use of galvanism the patient at once began to improve. The following case indicated very positively the value of electricity as a diagnostic agent: The case was one of typical facial palsy on the right side, from peripheral causes. During the course of the patient's recovery from this, a paralysis occurred on the left side of the face; this started as a peripheral paralysis, but on testing the muscles with faradaism, it was found that they responded with perfect facility. Therefore it was evident that the paralysis on this side was central. Shortly afterward the patient had a second attack involving the right side of the face, again peripheral. Dr. Rockwell said that in ovarian or uterine diseases of an inflammatory character, the faradaic current produced no improvement, but rather aggravated the pain, while in non-inflammatory conditions the faradaic current would relieve the pain.

Dr. George W. Jacoby said that the statements made in the text-books on this subject were too dogmatic. The diagnostic value of electricity was limited to certain peripheral affections, and even there it was not so great as originally maintained. In prognosis, also, we must limit its value. In a number of cases of facial paralysis of long standing he had found it impossible to obtain any reaction of degeneration. In two other cases, in which the paralysis had entirely disappeared, with the exception of a slight obliteration of the labio-nasal fold, there had been marked reaction of degeneration. These were exceptional cases and he could give no explanation of them. Cases have been published in which there had been a reaction of degeneration found in cerebral palsies; also in cases of primary dystrophy.

Dr. C. A. Herter referred to the electrical reactions in some cases of cerebral palsies. In one case under his observation, the patient, a woman aged seventy years, had a series of slight apoplectic attacks, succeeded in time by complete paralysis of the right side of the body—face, arm, and leg—and complete motor aphasia; at the end of a week distinct atrophy of the muscles of the forearm was noticeable, and at the end of a month it was very pronounced. The faradaic irritability of certain muscles of the forearm was very much reduced. The contractions were exceedingly sluggish, and the reaction of degeneration was undoubtedly present. The galvanic irritability of these muscles was somewhat diminished. Dr. Herter also referred to the rapidity with which the reaction degeneration made its appearance in some cases of injury to the spinal cord. In two instances under his observation it had been pronounced at the end of four days.

Dr. L. Stieglitz agreed with Dr. Sachs that the most important feature of the reaction of degeneration was the sluggishness of the contraction. It must be borne in mind that muscles of coarse fiber reacted much more sluggishly than those made up of fine fibers.

Dr. G. M. Hammond agreed in the main with the statements made by the previous speakers. Like Dr. Sachs, he had noticed that muscles which did not respond to a rapidly interrupted faradaic current would respond to a slowly interrupted one. The reverse was true with the galvanic current. With a battery that he employed he could get about 170,000 interruptions a minute, and he had found that the greater the number of interruptions the stronger the current required. This rule applied to both healthy and diseased conditions.

The President narrated the history of a case of facial paralysis that had come under his care. An examination showed increased contractility to galvanism in the muscles, and perfect preservation to faradaism, especially at the cathode. On the strength of this he had given a favorable prognosis. After six weeks of careful treatment the reactions had remained about the same, but the paralysis was no better. The patient then went to another neurologist, who made a like favorable prognosis, and applied electricity with equally unfavorable results. That was now a year and a half ago; the reactions were still normal, but the face remained just as much paralyzed as before. (The discussion was continued at the next meeting. [See page 377].)

Dr. Dana exhibited a portable perimeter which he had devised. It was made by Meyrowitz & Co., of New York.

Meeting of March 6, 1894.

The President, Dr. M. Allen Starr, in the Chair.

Exophthalmic Goitre; Thyreoidectomy.—Dr. J. Arthur Booth presented the case of a woman, aged twenty-four years and single. The family and personal histories were negative. About two years ago the woman had first noticed an enlargement of the throat, and three months later the eyes had become affected. The patient was positive that there had been no heart symptoms until six months ago, when palpitation, throbbing in the vessels of the neck, shortness of breath, and flushing of the face had appeared. All these symptoms had gradually increased in severity, and the patient had become irritable, easily excited, anxious, and unable to sleep because of the tumultuous action of the heart. When the woman first came under observation both the eyes were very prominent, especially the left, and the lids did not follow the movements of the eyeballs (Graefe's symptom). The pupils were moderately dilated, reacting to light and accommodation. The fundus was normal and vision was not impaired. The enlargement of the thyreoid body was marked, the right lobe being the larger. The pulse was 150, of high tension; the apex beat of the heart diffused, but there was no murmur. The respirations were 24. There was no tremor of the hands or fingers. Examination of the urine was negative. The patient had been given daily applications of galvanism, and had received one two-hundredth of a grain of aconitine twice daily and fifteen grains of iodide of potassium three times daily. She had also been instructed to practice full inspiration frequently, and to rest as much as possible during the day. Under this treatment there had been decided improvement in the symptoms, but only temporary in character, and on November 8, 1893, thyreoidectomy had been performed by Dr. B. F. Curtis at St. Luke's Hospital, the right lobe of the thyreoid being removed. The patient had made an uneventful recovery, and during the four months that had elapsed since the operation there had been a decided improvement in all her symptoms. The pulse-rate now ranged between 96 and 110. Many of her nervous symptoms had entirely disappeared. She slept well, did not suffer from palpitation, and was able to attend to her housework. The eyeballs were much less prominent. The left side of the thyreoid had diminished in size to a slight extent since the operation.

Dr. Robert Safford Newton presented a case. The patient was a girl aged twelve years. In this case almost complete extirpation of the thyreoid had been performed, only a small supernumerary lobe being left. Since the operation the exophthalmia, which had been very pronounced, had almost entirely disappeared. Before the operation the pulse-rate had been 180, and the child had suffered from cyanosis. The systolic and diastolic heart-sounds had been almost synchronous. The operation had been performed by Dr. Fowler on October 21, 1893, and the child was out of bed three days afterward. Her pulse now averaged about 100. She was able to attend school, and was much improved in every way.

The President stated that the absolute contrast between the symptoms in exophthalmic goître and myxœdema made it seem very probable that many of the symptoms of the former disease were due to an excessive secretion of the thyreoid gland, just as those in myxœdema were due to its suppression. Up to the present time there were not enough cases on record to permit us to make definite statements regarding it.

Progressive Muscular Atrophy of the Peroneal Type.—Dr. George W. Jacoby presented the case of an illegitimate child, a girl, aged twelve years. The mother stated that the child's father was a large, well-proportioned man, but that he had been rejected for military service abroad because his muscles were weak. This had been the only hereditary factor obtainable. The history of the case, in brief, was as follows: There had been no trouble at the child's birth. When she was two years of age, some months after an attack of measles, she had complained of pain in the lower extremities, which was so severe that she could not stand. This had lasted about six weeks, and from that time on she had appeared to have difficulty in walking. She had always been able to move her legs in every direction. When she was four years old it was noticed that one leg was weaker and thinner than the other. About a year ago it was first noticed that there was an atrophy of the thigh on the side opposite to that of the affected leg. She held the legs in a stiff and clumsy position, and there was a lack of symmetry between the two buttocks. She had marked lordosis and a slight lateral curvature. The muscles of both thighs were in a continual state of unrest, almost like fibrillary twitchings. The right foot was in equino-varus position. There were no sensory disturbances. There was partial reaction of degeneration in the affected muscles. The arms were not affected. The superficial reflexes were normal. The tendon reflexes were present, but somewhat reduced on the affected side. Dr. Jacoby said that, while he regarded the case as one of progressive muscular atrophy of the peroneal type, it was not an absolutely typical one, inasmuch as the atrophy, although bilateral, was asymmetrical, one leg and the opposite thigh being affected.

Dr. B. Sachs agreed in Dr. Jacoby's diagnosis. The atypical distribution of the atrophy should not militate against the diagnosis, as that was really the last thing to be considered, although still so much insisted on by many writers. The distribution of the atrophy was largely a matter of chance. He had seen six cases of progressive muscular atrophy of the peroneal type, which was, perhaps, the rarest form of the disease. In none of these had there been a crossed distribution of the atrophy, as in Dr. Jacoby's case.

Hysteria with Peculiar Epileptoid Attacks.—Dr. Booth related the case of a man aged twenty-two years. He was a jeweler and a native of Germany. During the past two months he had had attacks in which he suddenly began to sing, to slap his knees with his hands (either one or both), and to stamp with his feet. The attacks came on without apparent cause, and occurred frequently during the day and occasionally at night. Each attack lasted only a few seconds and ended with a screech. The patient did not lose consciousness. When he was eight years old he had had similar attacks, extending over a period of nine months. Again, three years ago, he had them for a period of about a year. At that time he had undergone treatment at Strassburg, Germany, but had received no benefit. The attacks had ceased of themselves. The patient did not smoke, and drank moderately. He had practiced masturbation to some extent when he was younger, and had continued it for three years. His family history was negative. He had never had a blow or a fall. He denied venereal disease.

Neuralgia of the Great Occipital Nerve, associated with Symptoms of a Destructive Lesion of the Cervical Sympathetic.—Dr. Alexander B. Johnson related the case of a man aged sixty years. He was married and a railroad conductor by occupation. He denied venereal disease and had no alcoholic habit. He had had malarial disease thirty years ago. There was no distinct history of rheumatism and there were no signs of organic disease. Over the chest and back he had several old, white, depressed scars, which he stated were the result of abscesses he had had many years ago, which had been a long time in healing. The patient had presented himself on November 1, 1893, complaining of a severe pain in the right side of the head, which made it impossible for him to work. This trouble began three years ago. The pain was of an aching character and occurred in paroxysms. It was referred to a point about two inches behind the lobule of the right ear, and radiated upward and backward to the vertex. There was marked tenderness on pressure over this area. The patient further complained of inability to see well with the right eye, and the upper eyelid on that side drooped so far as nearly to cover the pupil when the patient looked straight before him; the lower eyelid was slightly elevated. The right pupil was contracted, smaller than the left, and did not react to light. The eye was watery and the right side of the face was redder than the left. There was no paralysis of the face, but the skin and muscles appeared less full and felt flabby in comparison with the left side. The patient had been examined by Dr. M. Allen Starr, who had located the lesion in the cervical sympathetic, and had advised an exploratory operation, as the patient had undergone medical treatment of various kinds without relief.

On November 4, 1893, an incision three inches and a half in length had been made along the posterior border of the right sterno-cleido-mastoid, beginning just below the mastoid process. The sterno-cleido-mastoid muscle and the internal jugular vein were drawn forward and the internal carotid artery was lifted up. The superior cervical ganglion was found to be included within the sheath of the internal carotid, to which it appeared to be distinctly adherent. The adhesions were divided and the ganglion was freed, as well as the cord below, to the extent of two inches. No abnormity in appearance could be recognized in either the ganglion or the cord, and the wound was closed. The neuralgic pains and the tenderness of the scalp had disappeared at once after the operation. The lacrymation and flushing of the face had ceased. The pupil on the right side reacted slightly to light and became a little larger, and the right upper eyelid drooped so little that the drooping was scarcely noticeable and did not at all interfere with vision. At the end of six weeks, however, all the symptoms had returned, and at the present time the patient found himself in no way improved.

Dr. Johnson said that, while the symptoms in this case were fairly typical of paralysis or a destructive lesion of the cervical sympathetic, it was possible that they were due to a lesion of a destructive character in the spinal cord, the exact situation of which it was at present impossible to determine. He was unable to explain the immediate temporary benefit of the operation in this case, except that it was the result of a powerful peripheral impression.

Dr. William M. Leszynsky referred to a case which he had presented some years before, in which there had been hæmorrhage into the cervical portion of the cord, with decided symptoms of involvement of the cervical sympathetic on the same side.

The President said that Krause (*Zeitschrift für klinische Medicin*, 1891) had reported nine cases of crushing accidents to the spinal cord, involving the lower cervical and upper dorsal segments, in which there were marked symptoms referable to the cervical sympathetic. Regarding the case narrated by Dr. Johnson, the president said his own impression was rather against the idea of a cord lesion, on account of the absence of other cord symptoms, although that was not a valid reason for excluding it entirely.

Electrical Reactions and their Value in Diagnosis and Prognosis. – The President stated that the subject of electrical reactions, and their value in diagnosis and prognosis, which had been taken up at the last meeting (see page 375), was such an important one that it had been decided to continue it at this time.

Dr. Frederick Peterson said that in the main he agreed with the previous speakers regarding the reaction of degeneration, and to the conclusions recently published by Remak, in particular. We had found that both nerves and muscles might respond to both the faradaic and galvanic currents, and yet degeneration might exist. With the galvanic current, polar changes were inconstant; CCC might be greater than AnCC. In normal muscles we occasionally found, on the other hand, that AnCC might be greater than CCC. There was one sign that might be considered as always present where there was degeneration in the spino-muscular portion of the motor tract, and that was the sluggish, vermicular contraction of the muscle. Furthermore, in the great majority of cases of degenerative lesions in the anterior horns of the peripheral nerves, the faradaic reactions were diminished or lost. Dr. Peterson felt that sufficient stress had not been laid upon the actual value of electro-diagnosis in distinguishing cerebral palsies from the degenerative cases. He was convinced that most neurologists found it of the same value as heretofore, though we had modified our opinions as to the manifestations.

One of the speakers at the last meeting had called attention to the occasional occurrence of atrophy with degenerative reactions in cerebral palsies, as cited in two cases by Eisenlohr some years ago. It was interesting to know that Eisenlohr had recently made autopsies in both of these cases, and had found degeneration in the peripheral nerves. Other observers had found atrophic changes in the ganglion cells of the anterior horns in cases of hemiplegia with muscular atrophy. There was no evidence in those rare instances in which muscular atrophy accompanies cerebral palsy that the trophic change was produced by an affection of the trophic centers in the brain. On the contrary, all the evidence at hand showed that the atrophy depended upon degenerative lesions in the spino-muscular portion of the motor tract. The value of the electrical examination remained, therefore, as before.

The electrical reactions were certainly of great value in the distinction of the primary muscular dystrophies from progressive spinal atrophies.

Dr. J. F. Terriberry continued the discussion, and confined his remarks to the value of electrical reactions as regarded diagnosis and prognosis in paralysis of the facial nerve, and gave the following conclusions, which he had deduced from an analysis of twenty-four such cases that had come under his observation:

1. We have in electricity an agent of the highest value as an aid to diagnosis in paretic troubles of the seventh nerve.

2. The value of electricity as an aid to prognosis in facial paralysis is comparatively slight. Less than one half of the cases reported can be prognosticated, and even those with considerable hesitation.

3. Those cases in which the degree of paralysis is slight are the ones of which we can speak with most confidence by the aid of electricity.

4. It is impossible to foretell the issue of severe cases by means of the electrical examination.

5. The teachings of Erb respecting the diagnosis and prognosis of lesions of the motor peripheral nerves by means of electricity are the best at our command, although very imperfect.

Dr. William J. Morton sent a communication on the subject of electrical reactions, which was read by the secretary. He stated that in case of degeneration of a nerve, the faradaic and galvanic excitability was diminished or lost, while in case of degeneration of a muscle the faradaic excitability was lost, but there was an exaggeration of the galvanic excitability, with an inversion of its normal polar action. This abnormal reaction of an abnormal muscle was indeed a most brilliant discovery by Erb, but it had always seemed to him that an over-refinement of diagnostic and prognostic significance had been attached to it. As regarded diagnosis, the electric reaction was often the only means of deciding that a given nerve or muscle was in process of degeneration. In traumatic neuritis, in multiple neuritis, in the sciatic, facial, and many other forms of neuritis, and in the dystrophies and spinal lesions due to affection of the nerve cells of the anterior cornu, it was certainly a great satisfaction to feel sure that the degenerative process existed, and this satisfactory result was easily acquired by aid of the electrical reactions. He did not, however, consider the reactions of much value in making a diagnosis between one and another of the affections mentioned, or between a multiple and a migrating neuritis, or between subacute or chronic anterior poliomyelitis and progressive muscular atrophy, or, lastly, between a cerebral and a spinal lesion. As regarded the prognostic value of electrical reactions, Dr. Morton believed that over-confidence was placed in the deductions to be drawn from the "complete" and the "incomplete reaction of degeneration." When it was complete, as we sometimes saw it in grave facial paralysis and in infantile spinal paralysis, the prognosis was unmistakably bad and fairly exact. It was in the incomplete reaction of degeneration that we were often proved to be mistaken if we indulged in a too exact prognosis. In cases where the electrical reactions of both nerve and muscle had been completely lost, he had known the muscle to regain some part of its former volume and the normal electrical reactions to return by means of long-continued local treatment with sparks from an influence machine. He considered that the earliest sign of reaction of degeneration was the failure of a muscle to respond to a spark which would set a corresponding normal muscle into contraction.

Dr. Leszynsky said that in making the diagnosis between peripheral and cerebral lesions in cases of facial paralysis, the quantitative changes should be taken into consideration. In the peripheral cases there was a quantitative diminution, while in the cerebral cases there was a quantitative increase. In paretic conditions he still relied on electricity, as regarded both diagnosis and prognosis. There were cases in which we made mistakes, but in the vast majority of instances the laws laid down by Erb were correct.

Dr. Sachs said that if the discussion of this subject at the last meeting had had a nihilistic tendency, it was due to the fact that it had been treated from the neurologist's point of view, and the speakers had attempted to make out in what way the current would be of value in refinements of diagnosis. He expressed the view that everybody still recognized the vast importance of electricity in the diagnosis between cerebral and peripheral cases or between cerebral and spinal cases, and also its great value in functional cases.

Dr. E. D. Fisher said that in the main he agreed to the statements made by the previous speakers. In certain diseases, such as the dystrophies, chronic anterior poliomyelitis, and progressive muscular atrophy, the electrical reactions were of great value. It was true that in the dystrophies there was not an absolute loss of the faradaic response until very late in the disease; with marked atrophy there might still be a response to the faradaic current wherever the fibers remained. As regarded the diagnosis between progressive muscular atrophy and chronic poliomyelitis, in the former there was not, as a rule, a complete reaction of degeneration—there might be a partial one—while in the latter there was very apt to be complete reaction of degeneration. In distinguishing between cerebral and spinal lesions, electricity was of value, although not always essential.

Miscellany.

A Bill to Establish a Bureau of Public Health within the Department of the Interior of the United States.—A new bill thus entitled, prepared by the National Quarantine Committee of the New York Academy of Medicine, reads as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there shall be established in the Department of the Interior, under the direction and supervision of the Secretary thereof, a National Bureau of Public Health to consist of a commissioner of public health and an advisory council.

That the duties of the Bureau of Public Health shall be to collect and diffuse information upon matters affecting the public health, including statistics of sickness and mortality in the several States, the investigation by experimental and other methods of the causes and means of prevention of disease, the collection of information with regard to the prevalence of contagious and epidemic diseases both in this and other countries; the publication of the information thus obtained in a weekly bulletin; the preparation of rules and regulations for securing the best sanitary condition of vessels from foreign ports, and for the prevention of the introduction of infectious diseases into the United States and their spread from one State into another, which rules, when approved by the President of the United States, shall have the force of law; the ascertaining by a suitable system of inspection that these rules and regulations are properly carried out and enforced; the advising and informing the several departments of the government, and executives and health authorities of the several States on such questions as may be submitted by them to it, or whenever in the opinion of the bureau such advice and information may tend to the preservation and improvement of the public health, and in general to be the agent of the general government in taking such action as will most effectually protect and promote the health of the people of the United States.

The commissioner of public health shall be an expert sanitarian appointed by the President, by and with the consent of the Senate, and shall receive a salary of $6,000 per annum. He shall preside at the meetings of the advisory council and shall be the responsible head and executive officer of the bureau.

The advisory council shall consist of one member from each State of the United States. Such member shall be a physician of good repute and standing and shall be appointed by the Governor of the State which he is to represent in the council. The compensation of the members of the advisory council, when actually engaged in the performance of their duties under this act, shall be their actual traveling expenses and five dollars per diem for subsistence. The duties of the members of the advisory council shall be to aid in the gathering of information concerning the sanitary condition and health regulations of their respective States, and to consult with and advise the commissioner of public health regarding affairs within the province of the Bureau of Public Health at the annual or at special meetings, or under any condition which may seem to them to call for their opinion or suggestion.

Sec. 2. As soon as practicable after the passage of this act, the advisory council shall meet, with the commissioner of public health, at Washington, at such time and place as may be designated by the Secretary of the Interior, to perfect its organization and to proceed to the performance of the duties specified in this act. The advisory council shall thereafter meet annually at Washington on the first Tuesday of October and at such times and places as the President of the United States may designate, and shall continue in session for a period of time not exceeding six days, unless a longer continuance is especially authorized by the President of the United States.

Sec. 3. That the commissioner of public health shall prepare such rules and regulations as are necessary to be observed by vessels at the port of departure and on the voyage, where such vessels sail from any foreign port or place to any port or place in the United States, to secure the best sanitary condition of such vessel, her cargo, passengers, and crew, to be published and communicated to and enforced by the consular officer of the United States, which rules and regulations, when approved by the President of the United States, shall have the force of law and shall be carried into effect under the direction of the Secretary of the Treasury. None of the penalties herein imposed shall attach to any vessel, or owner or officer thereof, until a copy of this act, with the rules and regulations made in pursuance thereof, has been posted up for ten days in the office of the consul or other consular officer of the United States, in the port from which said vessel sailed; and the certificate of such consul or consular officer over his official signature shall be competent evidence of such posting in any court of the United States.

Sec. 4. The commissioner of public health shall from time to time publish the rules and regulations made by him and approved by the President to be used and complied with by vessels in foreign ports for securing the best sanitary conditions of such vessels, their cargoes, passengers, and crew, before their departure from any port in the United States and in the course of the voyage, and all such rules and regulations shall be observed in the inspection of the same on the arrival thereof at any quarantine station at the port of destination, and for the disinfection and isolation of the same, and the treatment of cargo and passengers on board, so as to prevent the introduction of cholera, yellow fever, or other contagious or infectious diseases, and shall furnish copies to the Secretary of State and to the Secretary of the Treasury to be by them issued to the officers of their departments.

Sec. 5. That it shall be unlawful for any merchant ship or other vessel from any foreign port or place to enter any port of the United States except in accordance with the provisions of this act, and with such rules and regulations of State and municipal health authorities as may be made in pursuance of, or consistent with, this act; and any such vessel which shall enter, or attempt to enter a port of the United States in violation thereof, shall forfeit to the United States a sum, to be awarded at the discretion of the court, not exceeding $5,000, which shall be a lien upon said vessel, to be recovered by proceedings in the proper district court of the United States. In all such proceedings the United States district attorney for such district shall appear on behalf of the United States; and all such proceedings shall be conducted in accordance with the rules and laws governing cases of seizure of vessels for violation of the revenue laws of the United States.

Sec. 6. That any vessel at any foreign port clearing for any port or place in the United States shall be required to obtain from the consul, vice-consul, or other consular officer of the United States at the port of departure, or from the medical officer, where such officer has been detailed for that purpose, a bill of health in duplicate, in the form prescribed by the commissioner of public health, setting forth the sanitary history and condition of said vessel and that it has in all respects complied with the rules and regulations in such cases prescribed for securing the best sanitary condition of said vessel, its cargo, passengers, and crew; and said consular or medical officer is required, before granting such duplicate bill of health, to be satisfied that the matters and things stated therein are true; and for his services in that behalf he shall be entitled to demand and receive such fee as shall by lawful regulation be allowed, to be accounted for as required in other cases.

Sec. 7. The President, in his discretion, is authorized to detail any medical officer of the government to serve in the office of the consul at any foreign port for the purpose of furnishing information and making the inspection and giving the bills of health hereinbefore mentioned. Any vessel clearing and sailing from any such port without such bill of health and entering any port of the United States shall forfeit to the United States not more than $5,000, the amount to be determined by the court, which shall be a lien on the same, to be recovered by proceedings in the proper district court of the United States. In all such proceedings the United States district attorney for such district shall appear on behalf of the United States; and all such proceedings shall be conducted in accordance with the rules and laws governing cases of seizures of vessels for violation of revenue laws of the United States.

Sec. 8. That it shall not be lawful for any vessel to enter any port of the United States to discharge its cargo, or land its passengers, except upon a certificate of the health officer at such quarantine station certifying that said rules and regulations have in all respects been observed and complied with, as well on his part as on the part of the said vessel and its master, in respect to the same and to its cargo, passengers, and crew; and the master of every such vessel shall produce and deliver to the collector of customs at said port of entry, together with the other papers of the vessel, the said bills of health required to be obtained at the port of departure, and the certificate herein required to be obtained from the health officer at the port of entry; and that the bills of health herein prescribed shall be considered as part of the ship's papers, and when duly certified to by the proper consular or other officer of the United States, over his official signature and seal, shall be accepted as evidence of the statements therein contained in any court of the United States.

Sec. 9. That the Secretary of the Treasury shall have authority to forbid entry of vessels from ports known or suspected to be infected with cholera, yellow fever, small-pox, or other declared quarantinable disease into all minor approaches to a port of entry or into any inlet or place within the jurisdiction of the United States not provided with a complete quarantine plant, in order to compel such vessels to be subjected to maritime sanitation at the quarantine station equipped for that purpose and located in the region in question.

Sec. 10. That on the arrival of an infected vessel at any port not provided with proper facilities for treatment of the same, the Secretary of the Treasury may remand said vessel, at its own expense, to the nearest national or other quarantine station where accommodations and appliances are provided for the necessary disinfection and treatment of the vessel, passengers, and cargo; and after treatment of any infected vessel at a national or quarantine station, and after certificate shall be given by the United States quarantine officer at said station that the vessel, cargo, and passengers are each and all free from infectious disease, or danger of conveying the same, said vessel shall be admitted to entry to any port of the United States named within the certificate. But at any ports where sufficient quarantine provision has been made by the State or local authorities, the Secretary of the Treasury may direct vessels bound for such ports to undergo quarantine at said State or local station.

Sec. 11. That when cholera or yellow fever or other disease declared quarantinable shall be ascertained by the commissioner of public health to exist within any port or place within any one of the United States or Territories, or the District of Columbia, in such form as threatens its spread to other ports or places within other States or Territories or the District of Columbia, by means of vessels and vehicles engaged in the transportation of goods or passengers between two or more States, or States and Territories, and the District of Columbia, whether by land or water, the commissioner of public health shall form such rules and regulations as in his judgment may be necessary to prevent the spread thereof from one State or Territory to another or the District of Columbia, which rules and regulations, when approved by the President of the United States, shall have the force of law, and the commissioner of public health is further authorized to employ such inspectors or other persons as may be necessary to enforce the rules aforesaid; and may select suitable localities for establishing stations on rivers and other lines of inter-State commerce and travel by railroads, and may cause to be erected necessary temporary buildings for the disinfection of passengers, baggage, cargoes, vessels, and vehicles, and may enforce the rules and regulations relating thereto approved by the President of the United States as aforesaid; it shall be lawful for the commissioner of public health, with the approval of the Secretary of the Interior, to confer upon any local health officer or health board within or near the locality where his or its authority is exercised, power to enforce the provisions of this act, and any rules and regulations made in pursuance thereof, and any person who shall knowingly disobey or violate any order, rule, or regulation made pursuant to the authority herein conferred, shall be deemed guilty of a misdemeanor, punishable by a fine of not less than five hundred dollars, and by imprisonment for a period of not less than one year.

Sec. 12. That the commissioner of public health shall, under the direction of the Secretary of the Interior, co-operate with and aid State and municipal health authorities in the execution and enforcement of the rules and regulations of such authorities, and in the execution and enforcement of the rules and regulations made by the commissioner of public health and approved by the President of the United States to prevent the introduction of contagious or infectious diseases into the United States from foreign countries, and into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia; and all rules and regulations made by the commissioner of public health and approved by the President of the United States shall operate uniformly and in no manner discriminate against any port or place; and at such ports or places within the United States as have no quarantine regulations under State or municipal authority, and where such regulations are, in the opinion of the commissioner of public health, necessary to prevent the introduction of contagious or infectious diseases into the United States from foreign countries, or into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia, and at such ports and places within the United States where quarantine regulations exist under the authority of the State or municipality which, in the opinion of the commissioner of public health, are not sufficient to prevent the introduction of such diseases into the United States or into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia, and when said rules and regulations have been made and approved by the President of the United States, they shall be promulgated by the commissioner of public health and enforced by the sanitary authorities of the States and municipalities, where the State or municipal authorities will undertake to execute and enforce them; but if the State or municipal authorities shall fail or refuse to enforce said rules and regulations, the President shall execute and enforce the same and adopt such measures as in his judgment shall be necessary to prevent the introduction or spread of such disease, and may detail or appoint officers for that purpose.

Sec. 13. That whenever the proper authorities of a State shall surrender to the United States the use of the buildings and disinfecting apparatus of a State quarantine station, the commissioner of public health shall cause an examination thereof to be made by a competent person, or persons, and if the said station, buildings, and disinfecting apparatus be found adapted to the purposes of a quarantine, and the commissioner of public health approve of their use as such, the Secretary of the Treasury shall be authorized to receive them and to pay a reasonable compensation to the State for their use.

Sec. 14. That whenever the commissioner of public health shall certify to the President, and it shall appear to his satisfaction that, by reason of the existence of cholera or other infectious or contagious disease in a foreign country, there is danger of the introduction of the same into the United States, and that notwithstanding the quarantine defense, this danger is so increased by the introduction of persons or property from such country, that a suspension of the right to introduce the same is demanded in the interest of the health, the President shall have the power to prohibit, in whole or in part, the introduction of persons and property from such countries or places as he shall designate, and for such period of time as he may deem necessary.

Sec. 15. That it shall be the duty of the commissioner of public health to obtain information of the sanitary condition of foreign ports and places from which contagious and infectious diseases are or may be imported into the United States, and to this end the consular officers of the United States, at such ports and places as shall be designated by the commissioner of public health, shall make to the commissioner of public health weekly reports of the sanitary condition of the ports and places at which they are respectively stationed, and that the reports, according to such forms as the commissioner of public health may prescribe, shall be promptly transmitted to the Bureau of Public Health; and the commissioner of public health shall also obtain, through all sources accessible, including State and municipal sanitary authorities throughout the United States, weekly reports of the sanitary condition of ports and places within the United States, and shall also, so far as he may be able, by means of the voluntary co-operation of the State and municipal authorities, of public associations, and private persons, procure information relating to the climatic and other conditions affecting the public health, the prevalence of epidemic, and other diseases; and statistics relating to marriages, births, and deaths.

Sec. 16. That the commissioner of public health shall prepare, publish, and transmit to the medical officers of the Army, Navy, and Marine Hospital service, to collectors of customs and State and municipal health officers and authorities, weekly abstracts of the consular and other sanitary reports and other such information as he may deem advisable or proper.

Sec. 17. The Bureau of Public Health may, with the approval of the Secretary of the Interior, make investigations both in the United States and, if necessary, in foreign countries, into the nature, origin, and prevention of contagious, epidemic, and other diseases, as well as the causes and conditions of particular outbreaks of disease in the United States, and in general may make investigations concerning matters relating to public health, and may employ such experts and for such time and in such manner as the exigencies of the service may require. When requested by the commissioner of public health, and when the same can be done without prejudice to the public service, the President may detail officers from the several departments of the government for temporary duty to act under the direction of said bureau, to carry out the provisions of this act; and such officers shall receive no additional compensation except for actual and necessary expenses incurred in the performance of such duties.

Sec. 18. That the commissioner of public health shall make an annual report of the operations of the Bureau of Public Health to the Secretary of the Interior, who shall transmit the same to Congress, with such recommendations as he may deem important to the public interests; and said report, if ordered to be printed by Congress, shall be done under the direction of the bureau; and that all mail matter of whatever class relative to the Bureau of Public Health and its duties, and addressed to the bureau or its commissioner, and indorsed "Official Business, Bureau of Public Health," shall be transported free of postage; and if any person shall make use of such indorsement to avoid the payment of postage on his private letter, package, or other matter in the mail, the person so offending shall be guilty of a misdemeanor, and be subject to a fine of five hundred dollars, to be prosecuted in any court of competent jurisdiction.

Sec. 19. That the Bureau of Public Health shall take such action by correspondence or conference as will tend most effectually to secure the co-operation of the State, municipal, and local boards of health in establishing and maintaining an efficient and accurate system of notification of the existence and progress of contagious and infectious diseases in the United States, and said Bureau of Public Health shall also by co-operation with the proper health authorities of foreign nationalities and municipalities, endeavor to extend to the United States a reliable system of international notification of the existence and progress of cholera, yellow fever, and other diseases declared quarantinable.

Sec. 20. Upon the recommendation of the commissioner of public health, the Secretary of the Interior is authorized to appoint, for duty under the instructions of the commissioner, not to exceed six sanitary inspectors at a salary not to exceed $1,800 per annum each; at least two of these inspectors shall be experts in quarantine matters, two shall be skilled bacteriologists, and one shall be an expert statistician. The commissioner of public health is authorized to employ one chief clerk at a salary of $1,800, one clerk of class 3 at $1,600, one clerk of class 2 at $1,400, and six clerks at $1,000 each per annum; also one messenger at $840, and one watchman at $720 per annum.

Sec. 21. The commissioner of public health shall annually submit to the Department of the Interior, or the President, for transmission to Congress, estimates for the expense necessary to maintain properly the Bureau of Public Health for the ensuing year.

Sec. 22. That there shall be and hereby is, appropriated, out of moneys in the treasury not otherwise appropriated, the sum of seventy-five thousand dollars, and the million dollars already appropriated and known as the emergency fund to be expended by the President is hereby appropriated to be expended in the execution of the provisions of this act.

Sec. 23. That the act entitled "An act granting additional quarantine powers and imposing additional duties upon the Marine Hospital Service," approved February 15, 1893, and all acts and parts of acts inconsistent with this act, be and the same are hereby repealed.

The American Surgical Association.—The annual meeting will be held in the lecture room of the medical department of the Columbian College, 1325 H Street, N. W., Washington, on May 29th, 30th, and 31st, and June 1st. The preliminary programme gives the following special subjects for discussion:

1. *The Surgical Treatment of Empyema*, by Dr. John Ashhurst, Jr., of Philadelphia. The summary of Dr. Ashhurst's paper is as follows: 1. No operation is justifiable unless the presence of pus is certain; unless thorough treatment by medicinal agents, blisters, etc., has failed; or unless the symptoms, dyspnœa, etc., are so urgent as to demand immediate relief. 2. The first operation should consist of simple aspiration, with antiseptic precautions. 3. When the fluid has partially reaccumulated, as it almost certainly will do if purulent, incision and drainage should be practiced. 4. Drainage is best effected by making two openings, one at the lowest point, and carrying a large drainage-tube through the cavity from one opening to the other. 5. Drainage should be supplemented by washing out the cavity with mild antiseptic fluids; when the lung has expanded and the discharge has nearly ceased, the tube should be shortened, the upper opening being allowed to heal, and the tube then being gradually withdrawn through the lower opening. 6. When the lung is so bound down by adhesions that it can not expand, resection of two or more ribs should be practiced (Estlander's operation, so called), in order to allow collapse of the chest wall and to promote healing by bringing the costal and visceral layers of the pleura into contact. 7. The more extensive operations of Schede and Tillmann, while probably justifiable in exceptional cases, are not to be recommended for general employment.

2. *Methods of Teaching Surgery*, by Dr. John S. Billings, of the Army, whose paper is thus summarized: Two classes of students. 1. Undergraduates. 2. Those wishing to make a special study of surgery. For the first class, work of teaching divided between professors of pathology, of surgery, and of clinical surgery, and demonstrators. What should be the relations between these and the teachers of gynæcology, orthopædic surgery, genito-urinary surgery, etc.? Methods of teaching. 1. Didactic lectures. 2. Recitations. 3. Demonstrations by means of manikins, cadavers, operations on animals, etc. 4. Clinical lectures to large classes. 5. Practical clinical instruction to small classes. How far should the didactic teaching be subordinated to clinical and demonstrative teaching? Relations of hospitals to clinical teaching. Instruction in history and literature of surgery. Provisions to be made for special students.

3. *The Surgery of the Kidney*, by Dr. Louis McLane Tiffany, of Baltimore, of whose paper the following is an index: The influence of disease of the kidney on general surgery. Nephritis. Pyelonephritis. Nephrolithiasis. Nephrectomy, partial and complete.

4. *Methods of Controlling Hæmorrhage in Amputation at the Shoulder, as Illustrated by Three Cases of Amputation at the Shoulder Joint and of the Entire Upper Extremity*, by Dr. W. W. Keen, of Philadelphia, in which the following points will be treated of: Amputation at the shoulder joint with the use of Wyeth's pins. Amputation at the shoulder joint with preliminary ligation of the vessels in the interspace between the deltoid and the pectoral muscles. Resection of the clavicle and securing the vessels, followed by amputation of the entire upper extremity, including the clavicle and scapula.

Further papers will be read by Dr. Hunter McGuire, of Richmond, and Dr. Joseph Ransohoff, of Cincinnati.

The American Medical Association.—The committee of arrangements has secured Odd Fellows' Hall building, corner of Market and Seventh Streets, for the meeting beginning June 5, 1894.

Assembly Hall, for the general meeting, has a capacity of fifteen hundred; the twelve smaller halls, for section work, range in capacity from five hundred downward, with committee rooms adjacent.

The engagement includes three of these rooms on Monday for the accommodation of associate organizations, such as those of the editors, colleges, etc.

The banquet room, on the ground floor, sixty-five by ninety-five feet, will be devoted to exhibition purposes, for which it is admirably adapted, and has been secured for the entire week, that exhibitors may have Monday in which to place their goods and Saturday in which to remove them. Nearly half the space is already taken, and others who desire to make a display of their goods under the most auspicious circumstances ever presented on the Pacific Coast should lose no time in applying to the chairman for space.

Headquarters for the association have been located at the Palace Hotel, corner of Market and Montgomery Streets, only four blocks from the place of meeting. Here we have Marble Hall, thirty by forty feet, as a registration room, where work will begin on Monday, and Parlor A for committee work.

The following hotels, centrally situated and convenient to the place of meeting, have made special rates for members and their families, which will apply during the entire stay of the visitors, who should, upon registering, signify that they are in attendance upon the meeting of the association.

The rates are for single persons, and the variation depends upon the size, situation, and appurtenances of the rooms, whether single, *en suite*, with private bath, etc. Special arrangements will be made for families or parties on timely notice.

Some of the hotels do business upon the American plan only, some upon the European plan only, and some upon either plan, to suit guests.

Palace Hotel (headquarters), American plan (rooms and board), $3.50 to $5.50 a day; European plan (rooms only), $1.50 to $3.50 a day. Baldwin Hotel, American plan, $3.50 to $5 a day; European plan, $1 to $3 a day. California Hotel, American plan, $3.50 and up a day; European plan, $1.50 and up a day. Lick House, American plan, $2.50 and up a day; European plan, $1 and up a day. Russ House, American plan, $2 to $3.50 a day; European plan, 50 cents to $2 a day. Occidental Hotel, American plan (only), $2.50 and up a day. Hotel Pleasonton, American plan (only), $2.50 to $5 a day. Grand Hotel, connected with the Palace by a glass-inclosed bridge across New Montgomery Street, European plan only, $1 to $2 a day.

In addition, there are many other hotels, boarding houses, lodging houses, and restaurants contiguous to the place of meeting.

Post-office Section K is located in the Palace Hotel, on the office floor, adjacent to the registration room, where members can receive all mail matter by having it so addressed.

The Section in Surgery and Anatomy proposes to devote a portion of its time to the systematic consideration of a few selected subjects upon which papers, each not occupying more than ten minutes, will be read. The topics and papers to be so presented are as follows: I. Malignant Growths: The Pathology of Malignant Growths, by Dr. E. Laplace, of Philadelphia; A Critique of the Sporozoan Theory of Malignant Neoplasms from a Micro-technical Standpoint, by Dr. A. P. Ohlmacher, of Chicago; The Clinical Recognition of Malignancy in Tumors, by Dr. C. A. Wheaton, of St. Paul, and Dr. Henry W. Coe, of Portland, Oregon; The Necessity of Early Surgical Interference in Malignant Tumors, by Dr. R. A. McLean, of San Francisco; The Value of Caustics in Malignant Growths, by Dr. John Parmenter, of Buffalo; The Radical Cure of Malignant Tumors by Operation, by Dr. J. H. Wythe, of Oakland, Cal.; The Value of Inoculations with Septic or Toxic Agents in the Treatment of Malignant Neoplasms, by Dr. John A. Wyeth, of New York. II. Tubercular Disease of Joints: Early Symptoms and Diagnosis of Tubercular Joint Disease, by Dr. Emmet Rixford, of San Francisco, and Dr. A. B. Judson, of New York; The Conservative Treatment of Tubercular Joints, by Dr. R. H. Sayre, of New York, Dr. Harry M. Sherman, of San Francisco, and Dr. James E. Thompson, of Galveston; The Operative Treatment of Tubercular Joints, by Dr. Robert W. Lovett, of Boston; The Treatment of Tubercular Joints by Injections of Iodoform, by Dr. N. Senn, of Chicago; The Treatment of Tubercular Joints by Injections of Corrosive Sublimate, by Dr. R. H. Plummer, of San Francisco. III. Hernia: The Causation and Prevention of Hernia, by Dr. James T. Jelks, of Hot Springs, Ark., and Dr. C. M. Richter, of San Francisco; The Management of Reducible Hernia, by Dr. Emory Lanphear, of Kansas City, and Dr. C. M. Fenn, of San Diego; The Treatment of Irreducible Hernia, by Dr. James B. Eagleson, of Seattle; The Treatment of Strangulated Hernia, by Dr. Joseph Ransohoff, of Cincinnati; The Radical Cure of Hernia, by Dr. W. E. S. Davis, of Birmingham, Ala., and Dr. H. O. Marcy, of Boston. IV. Hæmorrhoids, Fistula, and Fissure: The Pathology and Symptomatology of Hæmorrhoids, Anal Fistula, and Anal Fissure, by Dr. J. M. Mathews, of Louisville, and Dr. David Powell, of Marysville, Cal.; The Treatment of Hæmorrhoids, by Dr. H. M. Bishop, of Los Angeles, and Dr. Charles B. Kelsey, of New York; The Treatment of Anal Fistula, by Dr. J. McF. Gaston, of Atlanta, and Dr. G. B. Somers, of San Francisco; The Treatment of Anal Fissure, by Dr. Thomas W. Huntington, of Sacramento, and Dr. Lewis H. Adler, Jr., of Philadelphia. V. Fractures: The Treatment of Fractures of the Lower End of the Humerus, by Dr. Oscar H. Allis, of Philadelphia; The Treatment of Fractures of the Lower End of the Radius, by Dr. P. T. Conner, of Cincinnati, and Dr. C. L. Bower, of Philadelphia; The Treatment of Fractures of the Neck of the Femur, by Dr. Bedford Brown, of Alexandria, Va.; The Treatment of Gunshot Fractures, by Dr. George A. Goodfellow, of Tucson, Arizona; The Treatment of Fractures of the Shaft of the Femur, by Dr. Llewellyn Eliot, of Washington; The Treatment of Open or Compound Fractures, by Dr. H. H. Mudd, of St. Louis, and Dr. John B. Hamilton, of Chicago. VI. Obstruction to Urination in the Male: The Effects of Obstruction in Urination upon the Bladder and Kidneys, by Dr. J. William White, of Philadelphia; The Diagnosis and Treatment of Enlargement of the Prostate Gland, by Dr. Hunter McGuire, of Richmond, and Dr. W. T. Belfield, of Chicago; The Symptoms and Treatment of Stone in the Bladder, by Dr. W. T. Briggs, of Nashville; The Symptoms and Treatment of Tumors of the Bladder, by Dr. John B. Deaver, of Philadelphia, and Dr. C. F. Buckley, of San Francisco; The Treatment of Stricture of the Urethra, by Dr. J. Rosenstirn, of San Francisco.

The Shelby County (Indiana) Medical Society.—The sixth annual meeting will be held in Blessing's Opera House, Shelbyville, on April 9th, under the presidency of Dr. J. M. Adams, in addition to whose address the programme will include the following subjects for discussion: Diphtheria, by Dr. E. S. Elder, of Indianapolis (to be discussed by Dr. I. N. Love, of St. Louis, and Dr. Theodore Potter, of Indianapolis); The Early Diagnosis of Pulmonary Consumption, by Dr. E. F. Wells, of Chicago (to be discussed by Dr. A. C. Kimberlin, of Indianapolis, and Dr. G. T. McCoy, of Columbus); The Diagnosis and Treatment of Floating Kidney, by Dr. R. Harvey Reed, of Columbus, Ohio (to be discussed by Dr. W. N. Wishard, of Indianapolis, and Dr. W. O. Roberts, of Louisville); Vaginal Hysterectomy, by Dr. L. H. Dunning, of Indianapolis (to be discussed by Dr. L. S. McMurtry, of Louisville, Ky., and Dr. C. A. L. Reed, of Cincinnati); The Exhibition of Pus Tubes recently removed, by Dr. W. H. Wathen, of Louisville, Ky. (to be discussed by Dr. T. A. Reamy, of Cincinnati, and Dr. Joseph Eastman, of Indianapolis); An Additional Report of Cases of the New Operation of Ligation of the Broad Ligament for Uterine Fibroids, by Dr. Franklin H. Martin, of Chicago (to be discussed by Dr. E. Walker, of Evansville, and Dr. H. O. Pantzer, of Indianapolis); The County Medical Society, by Dr. J. C. Culbertson, of Cincinnati (to be discussed by Dr. O. W. Kemper, of Muncie, and Dr. A. W. Brayton, of Indianapolis); Nasal Reflexes, by Dr. J. A. Thompson, of Cincinnati (to be discussed by Dr. H. W. Loeb, of St. Louis, and Dr. L. C. Cline, of Indianapolis); The Treatment of Gunshot Wounds of the Chest, by Dr. A. C. Bernays, of St. Louis (to be discussed by Dr. P. S. Conner, of Cincinnati, and Dr. John B. Hamilton, of Chicago); The Modern Treatment of Suppurative Processes of the Middle Ear, by Dr. Max Thorner, of Cincinnati (to be discussed by Dr. J. Morrison Ray, of Louisville, and Dr. Daniel Thompson, of Indianapolis); Is the Usual Treatment of Post-partum Hæmorrhage Correct? by Dr. W. G. McFadden, of Shelbyville (to be discussed by Dr. G. S. Mitchell, of Cincinnati, and Dr. John Moffett, of Rushville); Penetrating Wounds of the Eyeball, by Dr. J. O. Stillson, of Indianapolis (to be discussed by Dr. D. S. Reynolds, of Louisville, and Dr. F. C. Heath, of Indianapolis); and Ophthalmia Neonatorum, by Dr. A. Blitz, of Indianapolis (to be discussed by Dr. J. E. Harper, of Chicago, and Dr. C. R. Holmes, of Cincinnati). Further papers will be read by Dr. Joseph Ransohoff and Dr. Rufus B. Hall, of Cincinnati.

The Association of American Physicians.—The ninth annual meeting will be held in Hall No. 2 of the Columbian University, corner of Fifteenth and H Streets, Washington, on May 29th, 30th, and 31st and June 1st, under the presidency of Dr. R. H. Fitz, of Boston, in addition to whose address the preliminary programme includes the following:

Some Researches in the Significance of Albumin and Casts, especially in those past Middle Life, by Dr. Frederick C. Shattuck, of Boston; Some of the Chemical and Bacteriological Characteristics of Milk, by Dr. Thomas M. Rotch, of Boston; The Chemical Products of the Anaerobic Putrefaction of Pancreatic and Hepatic Tissues, and their Effects upon the Tests for Morphine, by Dr. Victor C. Vaughan, of Ann Arbor, Mich.; The Effect of Various Metals on the Growth of Pathogenic Bacteria, by Dr. Meade Bolton, of Baltimore; Dr. S. C. Martin's Researches on the Bacteria of Vaccinia, by Dr. Harold C. Ernst, of Jamaica Plain, Mass.; Note on the Observation of Malarial Organisms in Connection with Typhoid Fever, by Dr. W. Gilman Thompson, of New York; Experiments in Artificial Melanosis, by Dr. George Dock, of Ann Arbor, Mich.; The Mild Character and Diminished Prevalence of Syphilis and the Infrequency of Visceral Syphilis, by Dr. John H. Musser, of Philadelphia; A Case of Osteomalacia, by Dr. George Dock, of Ann Arbor, Mich.; The Treatment of Typhoid Fever, by Dr. Samuel A. Fisk, of Denver; The Treatment of Certain Symptoms of Croupous Pneumonia, particularly in Adults, by Dr. Beverly Robinson, of New York; A Study of the Temperature in Cerebral Apoplexy, by Dr. Charles L. Dana, of New York; Traumatic Headache, by Dr. Charles F. Folsom, of Boston; Tetany in America, by Dr. J. P. Crozer Griffith, of Philadelphia; Clinical Report of Two Cases of Reynaud's Disease, by Dr. Frederick P. Henry, of Philadelphia; A Case of Mitral Stenosis, with Great Hypertrophy of the Right Ventricle: Death from Hæmoptysis, by Dr. A. McPhedran, of Toronto; Stomatitis Neurotica, by Dr. A. Jacobi, of New York; Nocturnal Pain in Dyspepsia, by Dr. Henry M. Lyman, of Chicago; Lead Palsy in Children, by Dr. Wharton Sinkler, of Philadelphia; and A Report on the Ultimate Results obtained on Experimental Eye Tuberculosis by Tuberculin Treatment and Preventive Inoculation, by Dr. E. L. Trudeau, of Saranac Lake, N. Y.

The Medical Equipment of Men-of-war.—In the *Union médicale* for February 20th there is an abstract of an article, published in the *Archives de médecine navale*, by Dr. Gazeau on the system of packing and transporting drugs now in use in the French navy. He compares it with that of the English navy, greatly to the disadvantage of the former.

The French men-of-war are divided into twelve classes, and for each class different numbers of receptacles are required to hold the ninety-two medicinal substances which constitute the apothecary's stock on board ship. The construction of these receptacles differs for every port, and is often changed at the same port for two successive deliveries. Hence arises the first inconvenience, that on every vessel, at each equipment for service, the arrangement of the medicine closets of the infirmary must be entirely changed, as the shelves of the compartments, having served once, are not considered available for further use. This work requires four or five days. A still greater inconvenience arises from the impossibility of preparing the drugs in advance, as they are different for each vessel according to its destination, whether for the coasts of France or for a long cruise, and the destination is not known until the ship is equipped for service.

The preparation of pharmaceutical materials at the present time requires not less than five or six days, owing to the new regulation which has been in force for about eighteen months, and provides for the adoption of a separate delivery of each article on the catalogue, and, in proportion as the naval force is increased, this necessitates the frequent renewal of the number of compartments provided for a man of-war, which is six hundred and six for a vessel with a crew of four hundred men for a long voyage. This explains the time demanded for the packing and transporting of these drugs. In this fact, says M. Gazeau, lies a danger the gravity of which forces itself upon our notice, and everything, he adds, should be done to avert it.

The singular means employed for the transportation of these drugs are extremely primitive. Bottles and vessels of all shapes and sizes are propped up with seaweed, packages of compresses or bandages, and bales of linen, in large willow baskets, and jolted over the rough pavement of the arsenals in a handcart, exposed to the noonday sun, the dampness of fogs, dirt, dust, and, in the ship's boat, the spray.

The English system is altogether different, and is at once simple, easy, and rapid. The drugs intended for each vessel are carefully packed in chests made in three sizes, each containing the requisite quantity for a year, according to the number of men comprising the crew, and marked with the corresponding number, thus preventing any mistakes being made in their delivery. They always contain the same preparations, no matter what the destination or character of the vessel may be, and, at all times, can be prepared in advance, and are always ready for transportation, which is then a question of only a few hours and not days, as it is in the French navy. Owing to this system, any changes to be made are accomplished with the greatest rapidity, and, if a defective chest is reported, it can at once be replaced with another. These chests take up very little space, are kept in order without trouble, and are accessible in time of war, and the constant moving of the bottles, which have to be carried back and forth from the infirmary in the hold, is avoided.

Dr. Gazeau has made a study of the methods employed in the naval services of other countries, particularly that of the English, and these studies have suggested to him a new plan which will doubtless be of great advantage to the French naval service.

The Prize of the Medical Society of the County of New York.—The committee on prize essays calls the attention of the members to the annual prize offered by it, together with the rules governing the award of the prize:

1. The prize shall consist of a gold medal, one hundred and fifty grammes in weight, which shall bear upon one side the seal of the society, and on the other the following: Awarded as the annual prize by the Medical Society of the County of New York to —— for an essay on ——.

2. The essays shall be handed to the committee on prize essays on or before the 1st of October in each year.

3. Each essay shall be accompanied by a sealed envelope containing the name and address of the author and bearing on the outside the motto which is inscribed upon the essay.

4. The writer of each essay is expected to present his dissertation in a plain and distinct handwriting, and with the pages bound in book form.

5. Any clew by which the authorship of an essay is made known to the committee will debar such an essay from competition.

6. Other things being equal, preference will be given to essays which exhibit original work on the part of the author.

7. The society does not consider itself as approving the doctrines contained in any of the essays to which the prize may be adjudged; and, in case of publication of a successful essay, the author shall be considered bound to print the foregoing in connection therewith.

8. The selection of the subject upon which to write will be left open to the competitors, but will be restricted to the field of what are called the departments of medical study.

9. The society will return to unsuccessful competitors their essays, if called for within six months after the award has been made.

10. The committee is empowered not to award a prize in case none of the essays are worthy thereof.

11. The prize is restricted to members of the Medical Society of the County of New York.

12. The society reserves to itself the right to require that the essay for which a prize is awarded shall be read before the society previous to being placed at the disposal of the author.

The committee consists of Dr. Joseph D. Bryant, Dr. Virgil P. Gibney, and Dr. Græme M. Hammond.

The Treatment of Severe Contusions of the Abdomen.—The *Journal des praticiens* for February 28th contains the report of a communication presented by M. Gross at a meeting of the *Société de médecine de Nancy* on January 10th. These cases, says M. Gross, are very serious, owing to such complications as visceral rupture, stercoral effusion, and peritonitis or symptoms of strangulation. This danger imposes on the surgeon the necessity of not relying on expectant treatment; there should be a positive diagnosis, but that is so much the more difficult at the outset because the symptoms often fail to be appreciated at that time. In organic affections of the abdomen, exploratory laparotomy is not positively serious. In cases of abdominal contusions the risks are reduced to a minimum, but still exist preceding peritoneal symptoms. Evidently there should be no occasion to discuss the gravity of abdominal contusions with visceral lesions. The surgeon should interfere, and his chances of success will be in direct proportion to the promptness of his intervention. He should try to be exact in his diagnosis, and, in case of doubt, proceed to open the abdomen, as he would if the lesion was serious. The dangers of laparotomy practiced in this manner are to be considered slight.

Hepatic Colic without Calculi.—At a recent meeting of the *Société nationale de médecine de Lyon*, the proceedings of which are reported in the *Lyon médical* for February 18th, M. Lépine said that he did not believe in the old theory that there could not be hepatic colic without calculi or other foreign bodies in the biliary ducts. He believed that hepatic colic with all its attendant symptoms could be caused by a simple spasm without foreign bodies. He based his theory on the three following classes of evidence: 1. Clinical. He described the frequency of hepatic colic in hysterical persons as a consequence of emotion or of an annoyance, without calculi being discovered in the stools. He had seen repeated attacks of hepatic colic caused by the ingestion of certain foods. Each time these attacks had been accompanied by two successive periods, one of polyuria, the other of anuria. Moreover, there had been retraction of the epigastrium and general spasm. 2. Post-mortem findings. In 1892 the *Revue de médecine* had published an account of an autopsy of a jaundiced person who for several weeks had had colic. The ductus choledochus had been found stretched and contracted, but containing no calculi, only a little gravel. He had observed another case, analogous to this one, where the man had received a blow in the right hypochondrium. He had had jaundice, and dropsy of the bladder had called for tapping. At the autopsy there had been found a cicatricial stricture of the ductus choledochus from two to three centimetres in length, without complete obliteration, where the probe could still pass. Jaundice had existed, nevertheless, and still existed at the time of death. It had been, then, certainly due to a spasm. 3. Experimental. Spasm of the lower part of the ductus choledochus could be produced in dogs. M. Doyon had thoroughly studied the reflexes which might cause contraction of the biliary ducts, and had shown that they might have their starting-point in the stomach.

The possibility must be admitted, then, of a prolonged spasm of the biliary ducts which might be accompanied with pains and every appearance of hepatic colic.

The Cleveland Medical Society.—At the last meeting, on March 9th, nearly three hundred physicians were present. The society had lately so amended and revised its constitution and by-laws that physicians could be admitted from all parts of northern Ohio, and, in response to the invitations sent out, thirty applications for non-resident membership were sent in at the first meeting. The society now numbers over two hundred resident members and is steadily growing.

Dr. Howard A. Kelly, of the Johns Hopkins University, Baltimore, read a paper entitled A Consideration of Intra-abdominal Pressure, with Practical Deductions applicable to Gynæcology. He was listened to with close attention, and the many practical points brought out were received with marked appreciation. His was the first of a series of papers to be read before the society during the year by prominent men from other cities.

Professor Kelly presented to the society a rare old book—a copy of the third edition of the work on anatomy published by Vesalius in 1514—and also another published by Tulp, of Amsterdam, in 1716, entitled *The Century of Observations.*

These were given for a nucleus about which the society hopes to build a large medical library. Already several large and valuable private libraries have been offered, and the society waits only for a fireproof building in which to store its volumes.

One of the distinguished guests said: "I am glad I came, as I have never before been in such a local medical society meeting in my life. A sort of medical revival must have struck Cleveland. It equals a State society. I venture to predict that the enthusiasm shown is indicative of a great future for this society. There could not be a more beautiful place of meeting. The accumulation of a medical library takes more time than anything else. Books are donated rather than purchased, but I predict that a large medical library will be rapidly collected in this great and growing medical center."

He advised that we hold on to the many men throughout the State who claim the Cleveland colleges as their *alma mater*.

Dr. M. J. Parke read a paper on Hypnotism, and ex-Judge Ring opened the discussion by setting forth the medico-legal aspects, while Dr. Henry S. Upson followed with a carefully prepared statement from the medical standpoint.

On the following morning Dr. Kelly gave a clinic in Charity Hospital before an immense company of physicians. He first catheterized the ureters in a case of suspected nephrydrosis, illustrating in the clinic many things of which he had spoken the previous evening. The second case was one of retroversion in which he brought the uterus into slight anteversion by two sutures through the posterior uterine and anterior abdominal walls. His method of suturing the abdominal wound was much appreciated. He used three sets of sutures, and all were buried. The last set brings the skin together, but the sutures do not pierce the epithelial layer, and are arranged in semblance to the walls of Troy. The last operation was upon a pelvic abscess, which was opened and drained through the vagina.

The Shortcomings of Disinfection in Rouen.—*La Normandie médicale* for March 1st contains the report of a recent meeting of the *Société de médecine de Rouen* at which M. Bataille made the following communication: A child had been attacked with diphtheria and taken to the hospital, and the authorities had been notified that it was necessary to disinfect an apartment in a certain locality where two other children were still living. M. Bataille thought that the bedding, the mattresses, and all other objects that might have been contaminated would be sent to the disinfecting steam bath; but the authorities had contented themselves with spraying the walls of the apartment with a 1-to-1,000 solution of corrosive sublimate, a method of disinfection which he said was absolutely useless. M. Bataille had been all the more astonished at this fact, as there was a law ordering the employment of the disinfecting bath together with the spray. It was in this manner that disinfection had been practiced during the last epidemic of typhus fever, and was still practiced in all other districts of France where diphtheria had to be combated.

The Ohio State Medical Society will hold its forty-ninth annual meeting at Zanesville on the 16th, 17th, and 18th of May, under the presidency of Dr. N. P. Dandridge, of Cincinnati. The secretary, Dr. Thomas Hubbard, of Toledo, to whom we are indebted for this information, remarks that, inasmuch as this year's meeting of the American Medical Association is to be held on the Pacific Coast, much of the material ordinarily reserved for its special sections will be brought out at the meetings of State societies; hence he predicts that those meetings will be unusually successful.

Lectures and Addresses.

LECTURES ON THE DIAGNOSIS OF ABDOMINAL TUMORS.

By WILLIAM OSLER, M. D.,
PROFESSOR OF MEDICINE, JOHNS HOPKINS UNIVERSITY.

Lecture III.—Tumors of the Liver.

Let me remind you of two anatomical points: First, that the liver extends entirely across the upper portion of the abdominal cavity, so that tumors may project to either side of the middle line in front, more rarely into the left pleura behind; and secondly, that in women the organ is frequently so dislocated that a large part of the convexity is in contact with the anterior abdominal wall; moreover, the anterior margin may be irregular from the projection of tonguelike portions, to which special attention will be directed in considering tumors of the gall-bladder.

Tumors of the liver are common, and, as a rule, their nature is not difficult to recognize. I shall not here refer to the simple enlargements of the organ in hypertrophic cirrhosis, in amyloid and fatty degenerations, or to the cases of uniform increase in volume met with in cancer and abscess. I shall call your attention only to those in which a prominent nodular mass or swelling—a tumor—was detected, and the nature of which had to be decided.

The usual causes are cancer, abscess, syphilis, hydatids, and occasionally tuberculosis. The tumors in connection with the gall-bladder I shall consider separately. Under certain circumstances the liver itself may form a tumorlike structure. The cases which have come before me for diagnosis in the past twelve months are distributed as follows: The liver itself, one; abscess, four; syphilis, two; cancer, four.

I. Tumor formed by the Liver itself.—I show you here a little patient (Case XXV) in the upper part of whose abdomen you can see, even from a distance, a prominent tumor, which pulsates actively at the rate of ninety per minute, lifting the skin in the epigastric region. This case has been under our care on and off for the past two years. She is thirteen years of age, and has an old mitral-valve lesion from rheumatism, with enormous enlargement of the heart. The apex beat is, as you see, far out in the sixth and seventh interspaces. The præcordia is very prominent, and there are signs indicating that the pericardium is adherent. During the past eighteen months ascites has constantly recurred, so that she is now tapped once a week, yesterday for the seventy-first time. When the abdomen is distended nothing is noticed, but after the fluid is withdrawn this remarkable tumorlike mass appears in the epigastrium (Fig. 21). On palpation, it is smooth, with a rounded edge, descends with inspiration, and expands visibly; and under the fingers, during the cardiac systole, it can be traced to the right, where at about the nipple line it passes beneath the costal margin. As it pulsates there can be felt, particularly at these periods, a to-and-fro peritoneal friction rub. The pulsation is expansile, and with the fingers of the left hand beneath the costal margin in the nipple line, and the right hand over the prominent mass, the whole structure can be felt to expand with each contraction of the heart. The situation, the shape, and the character of the pulsation leave no doubt whatever that this is a pulsating liver, a not very uncommon condition in chronic mitral disease, when the tricuspid becomes insufficient and allows each systole of the right ventricle to be communicated through the right auricle directly to the column of blood in the hepatic veins. The deformity of the liver, its cakelike shape, and rounded edge are caused, I believe, by a perihepatitis, possibly a direct extension from the pericardium, associated with which there is a chronic proliferative peritonitis. The recurring ascites is due partly to the contraction of the liver by the perihepatitis, partly to the chronic peritonitis. A case with almost identical features was for a long time under my observation at the University Hospital, Philadelphia.

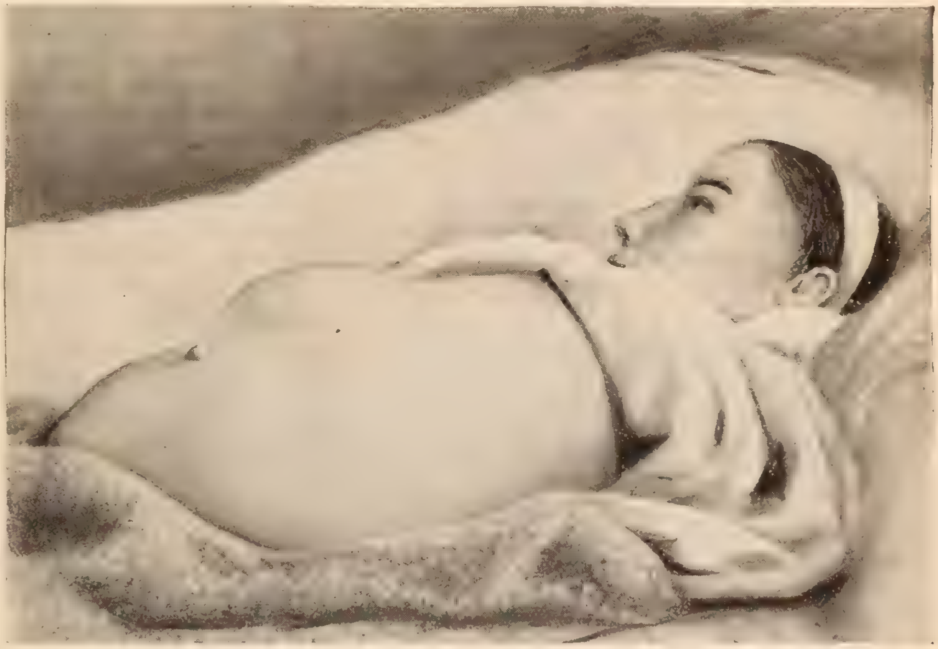


Fig. 21.—Pulsating tumor in the epigastric region consisting of the rounded and contracted liver.

In two other conditions—neither of which, however, has been before us this year—the liver itself may form a tumor and cause no little difficulty in diagnosis: first, the so-called floating liver, which is most commonly met with in women (though sometimes met with in men, as in a recent case reported by Kreider, of Springfield, Ill.), and is a feature of enteroptosis; and, second, the cases of great shrinkage and deformity of the liver in syphilis, in which the whole organ may be converted into a cluster of irregular nodular masses, held together by fibrous tissue, a condition to which the term *botryoid* has been given from its resemblance to a bunch of grapes.

II. Abscess of the Liver.—Unfortunately for the victims of this serious disease, a prominent tumor mass is only occasionally present. Of nine cases of abscess of the liver seen since the first of September of last year, of which seven were in the hospital (hospital numbers 5876, 6109, 6745, 7679, 7687, 7738, and 8001), four presented a prominent tumor, the nature of which came up for discussion.

Case XXVI. *Abscess of the Liver; Prominent Tumor; Incision; Recovery.*—Dr. X., aged sixty years, admitted September 6, 1892, complaining of weakness and of a painful tumor in the side. Family history good. The patient has been a healthy man and has had very few illnesses, the only severe one being typhoid fever, in 1863. The present trouble dates from April of this year, when he began to have pain in the right side, fever, and chilly sensations. The temperature sometimes rose to 103°, and he had a sense of distention and fullness in the right side, but there was no bulging, as at present. No history can be obtained of any local disease in the gastro-intestinal tract. He is positive that there had been no diarrhœa. After a month, during the greater part of which time he was in bed, the fever disappeared, but the pain and fullness in the right side persisted. Toward the end of June he noticed that there was a prominence below the right costal margin which has steadily increased. He has lost much in weight—from 250 to 185 pounds. Since June he has had at times slight fever, but no chills, and only occasional sweating. The bowels have been irregular, and he has had to take purgatives. There has never at any time been jaundice.

Present Condition.—Fairly well nourished, a little pale, but neither emaciated nor cachectic. Temperature last evening 101°; pulse 104, occasionally intermits. The radials are sclerotic. The tongue is red, not dry.

Abdomen.—A large tumor mass fills up the right half, and is strikingly prominent, as indicated in the figure from a photograph (Fig. 22). Below, it reaches the transverse umbilical line; above, it passes beneath the costal margin. To the left the swelling begins at the middle line. The skin over it is glossy and a little reddened. The respiratory movements of the abdomen are slight. On palpation, the entire right side above the transverse iliac line is occupied by a solid mass which is resistant except at the most prominent point, where it is soft and fluctuating. It is nowhere painful on pressure. Below, no definite sharp edge can be felt. Above, it is continuous with and not to be separated from the liver. Behind, it occupies the entire flank and can be felt on deep pressure below the eleventh rib. On bimanual palpation it is fixed, not mobile. Percussion gives a flat note everywhere over the tumor. Liver dullness begins at the seventh rib and is continuous with that of the tumor mass. In the parasternal line there is a slight resonance between the margin of the ribs and the tumor. The spleen is not palpable; area of dullness not increased.

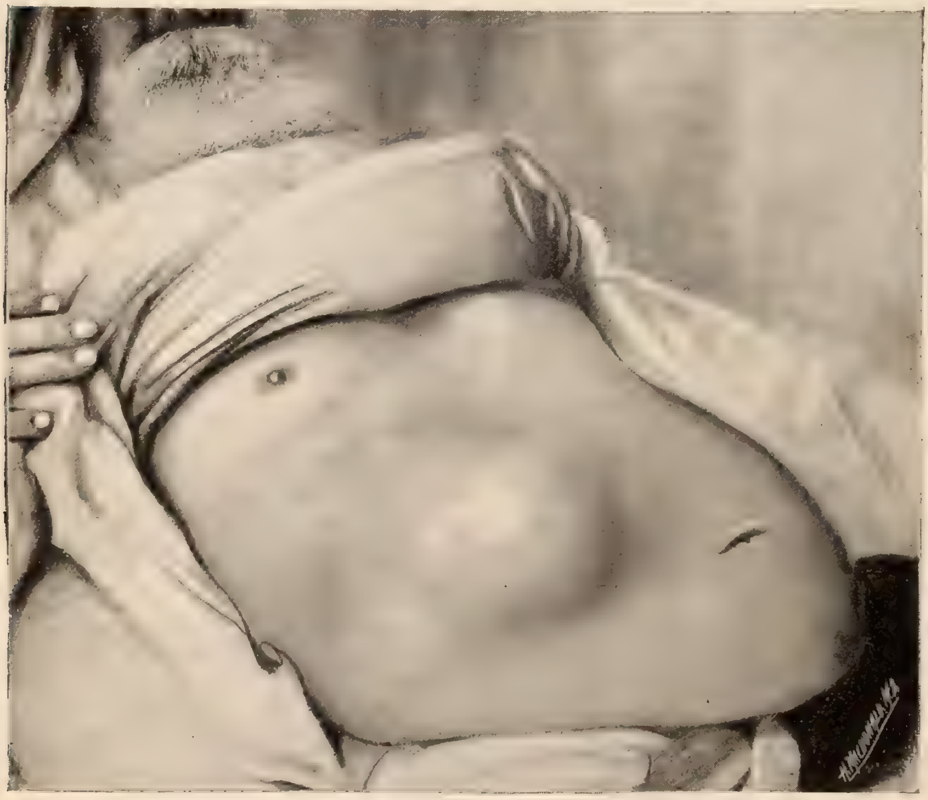


Fig. 22.—Abscess of the right lobe of the liver forming a prominent tumor (Case XXVI).

The cervical and inguinal glands are not enlarged. There is a soft systolic murmur at the apex; otherwise the examination of the thoracic organs is negative.

As doubt had been expressed by several physicians who had examined Dr. X. as to the nature of the tumor, an exploratory aspiration was made in the most prominent portion and a grayish-red pus withdrawn, which on examination contained much molecular *débris*, pus cells, fatty crystals, but no amœbæ.

On the 10th, under chloroform, Dr. Finney made an oblique incision over the tumor and opened a large abscess cavity in the liver, removing more than a litre of foul-smelling pus, darkish in color; on examination, no amœbæ were found. The walls of the abscess cavity, as felt by the finger, extended beyond the middle line and upward out of reach beneath the ribs. They were everywhere hard and firm. The patient reacted well after the operation; the temperature fell, and on the sixth day he was wheeling himself about the ward in a chair.

Patient left the hospital September 28th, and when last heard from, six months after the operation, remained well.

Case XXVII. *Abscess of the Liver; Prominent Tumor in the Epigastrium.*—Mr. W., merchant, aged fifty-four years, seen September 16, 1893, with Dr. Opie. Patient was a healthy man until July, 1892. Has had the ordinary diseases, and syphilis when a young man. Twenty or more years ago he had diarrhœa for some time.

He dates his present illness from July, 1892, when without any vomiting or diarrhœa he began to have pains in the abdomen, which persisted with great severity for about two weeks. At this time he could not straighten himself without very great pain. The abdomen was swollen; he had no jaundice. He improved somewhat and went away for about six weeks and gained a great deal in weight. In September, on his return, he again had the severe pain and oppression in breathing. He was at this time under the care of Dr. Opie and Dr. Chambers, who state that the liver was greatly enlarged. Abscess was suspected, and an operation was suggested but declined. The swelling was not so marked as it is at present. He does not appear to have had any chills, sweats, or indeed much fever. There never has been jaundice, and it was subsequently suggested that the enlargement of the liver was due to syphilitic disease. He lost a great deal of flesh during this illness—as much, he thinks, as fifty pounds. Throughout the early part of this year he was very much better and gained about twenty-five pounds in weight. He went away in March, but was not at all benefited by the change. He lost strength and flesh, and lately has had a great deal of dragging pain in the side, particularly if he attempts to lie on the left side. He has had no diarrhœa and no vomiting.

The patient is a large-framed man, with sallow complexion, looks ill, and is decidedly emaciated. He was sitting up; no swelling of the feet; conjunctivæ pale but not jaundiced. The pulse is 96, tension not increased; he has no fever.

The abdomen is enlarged and a prominent tumor fills the epigastric region and extends toward the left hypochondrium. The skin over it is glistening, dry, and abraded from counter-irritation. The superficial veins are not specially enlarged, except the left mammary, which is prominent. No enlargement of the superficial glands. On palpation, the abdomen is soft and natural until just at the level of the navel. Here the edge of the liver can be distinctly felt. To the left the edge passes obliquely and can be felt to pass under the costal margin at the ninth cartilage. To the right the edge passes obliquely upward and can be felt at the costal margin at about the tenth rib. Occupying the right epigastric region there is a prominent flat projection which causes a distinct asymmetry in this region. It is not painful on pressure. It is soft and boggy, but there is no definite fluctuation. Percussion shows the liver dullness to be greatly increased. Above, it extends nearly to the lower margin of the fourth rib, crosses the sternum opposite the cartilage of the fifth rib, and is continuous with the cardiac dullness. There is a vertical liver dullness from the fourth interspace to the level of the navel in the parasternal line. Behind, the dullness reaches very high, almost to the angle of the scapula.

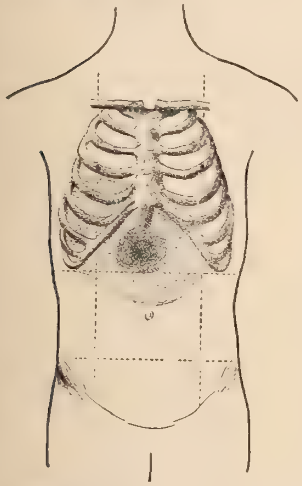


Fig. 23.—Outline of the liver and situation of the tumor in Case XXVII.

The spleen is not enlarged. The heart is a little pushed up; the sounds are clear. The examination of the lungs is negative.

The diagnosis of the condition was not at all easy. The progressive emaciation and the enormously enlarged liver and somewhat irregular outline suggested, of course, cancer, against which, however, was the notable fact that he had improved so much after a very severe attack last year, in which the liver was enlarged. The prominent hemispherical mass in the right epigastric region was suggestive of abscess. Though he had had no chills and no fever, and although in the history not one of the usual ætiological factors preceding abscess of the liver was present, the sallow cachexia, the dragging pains on attempting to lie on the left side, and the prominent doughy tumor of the liver, made an exploratory examination advisable. An aspirator needle was thrust deeply into the most prominent part of the tumor and immediately a grayish and subsequently a reddish-brown pus flowed out freely.

The patient was removed to the City Hospital, where on September 21st Dr. Chambers opened the abscess and removed a gallon and a half of reddish, thin pus, which microscopically was made up of a granular *débris*, very few pus cells retaining their contour; no amœbæ. The patient rallied from the operation, but sank and died in about ten days.

Case XXVIII. *Abscess of the Liver; Tumor in the Right Epigastric Region; Rupture into the Lung.*—Simon G., aged twenty-seven years, admitted July 11, 1893, complaining of hiccough and pain below the ribs on the right side. He has always been healthy until five years ago, when he was laid up in the Hebrew Hospital for six weeks with a severe cough. His habits are good and he has not had venereal disease.

Three weeks ago his present illness began with irregular cramps in the hepatic region. He had hiccough for nearly a week, day and night, and this was in reality his most distressing symptom. He has vomited several times; lost his appetite and has only been able to take milk and whisky. The bowels have been constipated and he had never had any severe diarrhœa. No cough; no expectoration. On July 1st he had a very severe chill in which he shook for an hour, followed by fever and sweating. The following day, July 2d, he felt better. On the 3d he had a second chill at eight o'clock in the morning, and shook for an hour. On the 4th he had another chill. He then went into the Norfolk Hospital, where he was given a great deal of quinine. He has sweated a good deal; has not noticed that he has become at all yellow. He has lost somewhat in weight. At present he complains of the incessant hiccough and of pain in the region of the liver.

Present Condition.—Patient is fairly well nourished; face a little emaciated; conjunctivæ slightly tinged. The skin is not jaundiced. Tongue has a light white fur. Temperature has not been above 99·5° since his admission; pulse, 84; tension normal.

On inspection, the thorax on the right side looks a little fuller than the left, particularly behind in the infrascapular region. The left intercostal grooves are faintly visible; the right not at all. The apex beat of the heart is not visible; the percussion is clear on the left side; on the right side in front it is clear to the upper border of the sixth in the nipple line, and to the upper border of the fifth in the midaxillary line. Behind there is defective resonance at the angle of the scapula, shading quickly into dullness. The respiratory murmur is heard well on both sides. It is feeble in the infrascapular region on the right side; no râles; no friction. The abdomen looks natural, but there is a marked fullness on the right side in the hypochondriac region, and the groove below the costal margin is completely obliterated. In this region, occupying a space thirteen centimetres in diameter, there is a very definite prominence. On palpation, this is resistant and tender, and the skin at the costal edge seems a little infiltrated. The liver margin can be felt reaching nearly to the level of the navel and the edge is rounded. To the right it passes under the costal margin at the tip of the tenth rib. The left lobe can be felt filling the upper epigastric region. The liver dullness extends high in the axillary region, reaches the upper border of the fifth, and there is here eighteen centimetres of vertical dullness.

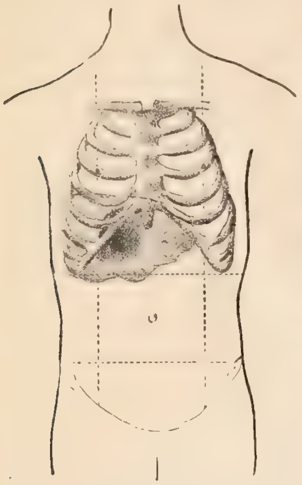


Fig. 24.—Outline of the liver and situation of the tumor in Case XXVIII.

The edge of the spleen is distinctly palpable. The superficial lymph glands are not enlarged and the examination of the stomach and intestines is negative. A rectal tube was passed, but no amœbæ were found in the mucus obtained. The blood examination was negative.

I aspirated in the parasternal line at the most prominent point of the tumor, but obtained no pus.

I did not see this patient again, but abstract the following from Dr. Thayer's notes: Although no pus was obtained on the first aspiration, there seemed to be no question as to the correctness of the diagnosis. Chills occurred on July 14th, 17th, 19th, and 23d, and on August 1st, 3d, and 4th. The patient was urged to have an operation, but declined. The tumor mass remained prominent, but no definite fluctuation developed. On August 20th the patient suddenly began to cough, calling for the nurse and saying that he felt something had burst inside him. He expectorated several spitcupfuls within a short time of a dirty, yellowish-green pus. The odor was not offensive; microscopically, it showed degenerated pus cells; no amœbæ. An interesting feature is that on the following day the prominence in the right epigastric region had almost disappeared. The physical signs at the right back had not changed. Over the area of dullness the respiratory murmur was simply enfeebled, and there were a few fine râles on coughing. The temperature range was from subnormal to 102°; once only, after a chill, 103·3°. He was repeatedly advised to have an operation, but declined, saying that he would sooner take his chances. The expectoration of purulent matter continued, but in diminishing quantities; thus on the 23d it was one hundred and twenty cubic centimetres; by the 26th, thirty cubic centimetres; and on the 28th, forty cubic centimetres. On August 1st it had fallen to only ten cubic centimetres; on the 3d he had none, and on the 6th only ten cubic centimetres. No amœbæ were found, only pus cells, most of them in a condition of disintegration. On August 8th he was taken home by his brother, the condition not having materially improved, and the temperature still ranging from 98° to 102°, occasionally to 103°. The prominent mass on the right side never reappeared. On discharge, the liver flatness began in the fifth interspace in the nipple line; the border could be felt five centimetres below the costal margin. In the midaxilla there were thirteen and a half centimetres of vertical dullness. In the median line from the upper limit of flatness to the lower border, determined by palpation, was fourteen centimetres.

Case XXIX. *Acute Dysentery; Abscess of the Left Lobe of the Liver; Tumors in the Left Epigastric Region; Incision; Death.*—Raphael F., tailor, aged twenty-seven years, admitted August 22, 1893. His family history is good. Patient is a Russian, and has been in this country only nine years. Has been always healthy and strong.

Present illness began abruptly about a month ago with an attack of vomiting and purging; had six or eight stools the first day. The next day he was rather better and was pretty well for two or three days. Then he again had vomiting and much purging. Evidently the attack was one of acute dysentery, as he had numerous stools containing slime and blood, passed with much straining and tenesmus. He does not think he had at this time any fever. He has lived almost entirely on milk. The diarrhœa has continued ever since. On admission, he was thin; lips and mucous membranes of good color; tongue covered with a thick, white coating. The temperature was 97°. The examination of the thoracic organs was negative. The abdomen was retracted; patient complained of pain on palpation over the cæcal region. The liver dullness began in the sixth interspace in the nipple line and extended to the costal border. The edge was not palpable. He had three stools within the first twenty-four hours, brownish in color, fluid, and containing small strings of mucus. In the mucus obtained by passing the rectal tube numbers of actively moving amœbæ were found. He was ordered large, high injections of sulphate of quinine—one to two thousand—and a milk diet. During the first week in hospital there was no special change. The passages were from four to seven in twenty-four hours. The temperature was never above 99°, and he seemed to be doing well. For the next two weeks also he seemed to be very comfortable. The temperature between August 29th and September 11th was not above normal. The dysenteric symptoms had improved very much, and from September 9th to the 13th he had only had one or two movements a day. On September 14th he made, for the first time, complaint of a pain in the epigastric region, and there had been for two days slight fever, the temperature rising to 100°. There was a little sensitiveness over the liver in the middle line, but the organ did not appear to be enlarged. On September 17th there was noticed for the first time a rounded prominence occupying the left half of the epigastric region, which moved up and down with respiration and which pulsated with each heart beat. It extended from the costal margin in the parasternal line to a little beyond the middle line. It was rounded, smooth, firm, but elastic, and did not appear to fluctuate. The pulsation was very marked and seemed almost expansile. On placing the patient, however, in the knee-elbow position the pulsation entirely ceased; no bruit was heard over it. The situation of the tumor is indicated in the annexed diagram. The liver dullness began at the sixth rib and extended just below the costal margin in the nipple line. In the parasternal line it did not begin until the seventh rib, and in the middle line the dullness was about the middle of the ensiform cartilage and was then continuous with the tumor mass on the left side. In the midaxillary line the dullness began at the seventh rib and extended to the costal border. The splenic dullness could not be obtained, nor could the margin be felt. There was no increase in the hepatic dullness behind.

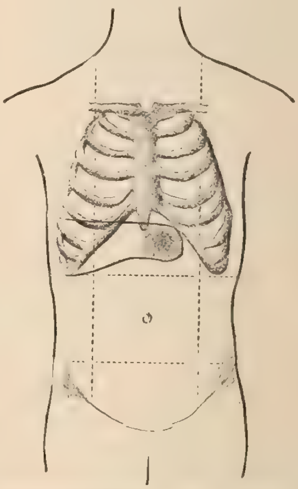


Fig. 25.—Outline of the liver and situation of the tumor in Case XXIX.

On the 18th the temperature rose to 101·2°, the highest point reached, and the patient had no chills, but was sweating profusely. The tumor was more prominent; was very tender, but there were no signs of fluctuation. The diagnosis of abscess of the liver was made and the case was transferred to the surgical wards. Dr. Finney operated, found the peritonæum adherent to the liver, and opened a superficial abscess in the left lobe. About seventy-five cubic centimetres of thick, yellowish-green pus were evacuated, in which amœbæ were present. The patient stood the operation very well, but he became progressively weaker. The temperature never rose above 101·5°. He died on the 24th.

The situation of the palpable tumor in liver abscess is well illustrated by these four patients. In Case XXVI it was in the right lumbar and right side of the umbilical regions, entirely below the costal margin. In Case XXVIII it was in the right hypochondriac region. In Case XXVII it was median, projecting prominently midway between the navel and ensiform cartilage; and in Case XXIX it was entirely to the left of the middle line in the upper quadrant of the epigastric region.

In the diagnosis of liver abscess you must take into consideration the following points:

Antecedent Conditions.—Dysentery is in this latitude by far the most common, though it was only present in one of the four cases I have narrated. Of the nine cases, however, under observation during the past year, dysentery occurred in six cases. There may, however, be no recognizable cause, as in Cases XXVI, XXVII, and XXVIII. Bear in mind that when the patient comes before you with chills and fever, a sallow cachexia, and an enlarged, tender liver, the dysenteric symptoms may have entirely disappeared, or there may be only at intervals slight recurrences. Under these circumstances a catheter or the long rectal tube passed into the bowel may bring away portions of mucus containing the amœbæ, associated with the severer form of dysentery.

Toxic Features.—Irregular fever, chills, and sweats are rarely absent. The sallow tint of the skin, the progressive anæmia, and the paroxysms of intermittent fever lead very frequently to a diagnosis of malaria.

Local Symptoms.—Increase in the size of the liver and tenderness on pressure are the most important. The enlargement is most frequently of the right lobe, but the whole organ may be greatly increased in size and extend below the navel. When the abscess is in the right lobe the enlargement may be chiefly behind, ascending high into the right pleura. Prominent bulging of the lower portion of the right side of the thorax is extremely common.

And lastly, and what interests us here especially, a tumor mass may develop beneath the right costal margin or in the epigastric region. The tumor is usually (always when recent) tender; often develops with rapidity. The rapid increase in size with tenderness, however, is not to be relied on as characteristic, as I will mention to you in the fourth of the cases in the cancer series this was a very marked feature. Fluctuation may be obtained readily when the tumor mass becomes superficial. The tumor may persist, as in Case XXVI, for months without very much change. With or without the presence of tumor, when liver abscess is suspected, the long aspirator needle should be freely used.

(*To be concluded.*)

Original Communications.

RECENT EXPERIMENTAL CONTRIBUTIONS TO THE PHYSIOLOGY OF DEGLUTITION.*

By S. J. MELTZER, M. D.

When I accepted the courteous invitation of our chairman to read a physiological paper before this section I was prompted by the desire to bring to your notice a subject in which I was for a time personally intensely interested. I mean the results of a long series of experiments upon certain problems of the physiology of deglutition. I shall attempt to give a brief review of the facts and how they were found. I now enter without further apology on the discussion of our subject.

Deglutition is the act of conveying food or drink from the mouth into the stomach through a part of the alimentary canal where neither digestion nor absorption occur. Motion is, therefore, the only function which here comes into consideration, and as the entire deglutitory canal is sufficiently provided with muscular tissue, there seemed to be very little left to the physiology of deglutition besides a classification of the anatomy of the parts in question. Since Magendie,† the entire complex of deglutition is usually divided into three acts: the muscles of and around the mouth convey food and drink into the pharynx, from where the pharyngeal muscles then transmit them further into the œsophagus. There the swallowed mass is carried down into the stomach by the so-called peristaltic movements of the œsophagus. According to this theory, then, the transmission of the bolus through the entire deglutitory canal is effected in each part by the muscle fibers located within it. This theory predominated until 1880, when Professor H. Kronecker made the observation that liquids reach the stomach too quickly after being swallowed to justify the belief that they are transported by the slow process described above. He then induced the late Professor F. Falk to investigate this question. The experiments they performed consisted in introducing into the pharynx a tube connected with a manometer, thus studying the pressure in the pharynx during the deglutition. The pressure was found to be as high as twenty centimetres water. Kronecker and Falk,‡ in reporting this experiment, have put up the hypothesis that the transmission of liquids and soft masses from the mouth into the stomach is not accomplished by the peristalsis of the œsophagus, but the morsel is rather thrown down by a force located within the mouth or the pharynx. The experiments of Falk, however, have only demonstrated that there is during deglutition sufficient force in the pharynx or above it to accomplish such a throwing down of food. But they have by no means proved that the transmission of the food is really accomplished by this force and not by the peristaltic movements.

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* Read before the Section in Neurology of the New York Academy of Medicine, February 16, 1894.

† Magendie. *Thèse soutenue à l'École de médecine de Paris*, 1808.

‡ Falk and Kronecker. Ueber den Mechanismus der Schluckbewegung. Du Bois-Reymond's *Archiv*, 1880, p. 296.

When, by the advice of my friend and teacher Professor Kronecker, I started on further investigation of the mechanism of deglutition, my first task was to find an efficient method by means of which the point in question could be proved or disproved. I shall not venture to mention here all the attempts and methods employed to attain our purpose. I wish only to speak in detail of a method which not only solved our problem satisfactorily, but was also fruitful in disclosing many other valuable facts. It is simply the graphic method.

When the open end of a stomach tube is connected with a Marey's tambour, the lever of which writes on a revolving kymograph, while a small rubber balloon is attached around the opening of the other end of the tube, any pressure exerted upon this balloon will increase the pressure in the Marey's tambour and raise the lever, thus producing a curve upon the revolving drum. If the pressure is a short and quick one, the curve will appear short and steep; if the pressure is long and the increase and decrease are slow, then the curve will also be long and with a more gradual ascent and descent. Now, if the balloon end of the stomach tube is placed within the œsophagus, the balloon will be compressed either by the passing by of the food or by the contraction of the œsophagus, thus producing a characteristic curve upon the revolving kymograph. If, further, another shorter tube with a balloon is placed within the pharynx, while the other end is also connected with a Marey's tambour, the lever belonging to this tambour will write a characteristic curve of the pharynx. If we now add a time marking apparatus, and if the levers belonging to both tubes are adjusted in a vertical line one above the other, we are then enabled to measure the time which elapses between the beginning of the two curves—*i. e.*, between the beginning of the contraction of the pharynx and the beginning of the contraction of the œsophagus.

I shall not mention all the difficulties which had to be overcome; it will be sufficient to state that I finally learned to place both tubes in my own pharynx and œsophagus and keep them there continually for hours while drinking liquids or swallowing soft food. The balloon end of the œsophagus tube was shifted in different sections of the œsophagus, while the pharynx tube, of course, always remained in the same place in the pharynx. The curves which were produced by the œsophagus tube always had two elevations: first came a short and steep one; then, after a certain interval, a prolonged elevation followed. The height of the steep elevation was always in proportion to the quantity of the swallowed mass; after an "empty" swallow the elevation was very low, while the prolonged elevation was entirely independent of the quantity swallowed. The size of this elevation depends upon the section of the œsophagus only in which the balloon was located, of which more later. It was unmistakably clear that the first elevation was produced by the rapid passing by of the food, while the second elevation was due to the contraction of the œsophagus. The curve produced by the pharynx tube had also two elevations, or rather one elevation with two crests. The constant interval between these two crests amounted to three tenths of a second. It was apparent that in the pharynx curve also the first sharp crest was produced by the passage of food, while the other rather flat crest was due to the contraction of the pharyngeal muscles. The interval between the first point of the pharynx curve and the first sharp elevation of the œsophagus curve, no matter of what section, did not amount to more than one tenth of a second. These curves, then, teach us that the food is indeed thrown down from the mouth through the pharynx and œsophagus with great rapidity, not only before the peristaltic movements of the œsophagus appear, but even before the muscles of the pharynx commence to contract.

I shall mention here that the astonishing rapidity with which, according to these experiments, the swallowing of food takes place induced us to test it by still another kind of experiment.* I shall not speak any further of these experiments, except to say that their outcome was a positive confirmation of our mentioned results.

I have just stated that our experiments demonstrate that the throwing down of food occurs even before the contraction of the pharyngeal muscles takes place. The throwing force, then, must lie in front of the pharynx muscles. Our next task was now to find the source of this force—*i. e.*, to ascertain which of the muscles of the mouth accomplished this rapid swallowing. By previous experiments of Kronecker and Falk it had already been established that the deglutition was little impaired by the bisection of both hypoglossus nerves in animals. Thus the muscles of the tongue being excluded, my attention was turned toward the mylo-hyoid muscles. Indeed, after the bisection of the nerves leading to these muscles in a dog, this animal could not drink any more from a vessel standing on the floor.† It will not be superfluous to remind you here of the anatomy of these muscles. The origin of these muscles is the mylo-hyoid ridge of the inner surface of the inferior maxilla, and their insertion is in the middle tendinous rhaphe common to both muscles. They form together a concave bed for the reception of the tongue, which by the contraction of these muscles is lifted up and pressed against the palate. This pressure ought to develop a considerable force, as the tongue, even in a state of rest, is in contact with the palate. The pressure is still more increased by the contraction and the thickening of the tongue itself which accompanies the beginning of the deglutition.

If we have only these parts in our mind—the concave bed of the mylo-hyoid muscles, covered on the top by the palate and terminating in the pharyngeal and œsophageal tube—we may well compare the entire canal to a bulb syringe, where a quick, strong pressure upon the bulb squirts the liquid with great rapidity through the attached tube.

I shall mention here briefly that dissection of the pharyngeal muscles in dogs did not prevent them from swallowing in a natural way, only that in some of the animals after a while "Schluckpneumonie" developed.[*] This means that, though most of the food has been thrust by the mylo-hyoid muscles through the pharynx into the œsophagus, some of it occasionally remains within the pharynx, and, as the pharyngeal muscles have been cut, these remnants could not be removed by them into the œsophagus, and thus found their way into the larynx and the lungs.

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* Meltzer. Ueber die Vorgänge beim Schlucken. Du Bois-Reymond's *Archiv*, 1880, p. 446.

† Meltzer. Die Bedeutung des Mylohyoideus. Du Bois-Reymond's *Archiv*, 1880, p. 299.

Turning again to our graphic method, I have to state that the further experiments have been continued with the œsophagus tube alone, taking the first steep elevation as the mark for the beginning of the deglutition; the difference of time, according to the statement made above, was not more than a tenth of a second, and could therefore be neglected. With this tube I obtained the characteristic curves of all the parts of the œsophagus, the studied localities being only two centimetres apart. The results were as follows: The interval between the first and second elevations was the longer, the deeper the balloon was pushed into the œsophagus. But, instead of observing a steady and proportional increase in the interval with the depth in the œsophagus, we found that, within the first section of six centimetres' length, the interval between both elevations remained the same, about a second and a fifth. Then came another section of twelve centimetres' length, where again the interval of the entire section was the same—*i. e.*, about three seconds. Finally, a section of six centimetres followed, with a constant interval of about six seconds. This all means that the movements of a human œsophagus, at least of my œsophagus, are not of a peristaltic nature; the contraction of the œsophagus occurs in three sections. The first section begins to contract a second and a fifth, the second section three seconds, and the last section six seconds after the beginning of deglutition. A similar result was obtained in the study of the duration of the contractions; each section had in its entire length an equal duration. The contraction of the first section of six centimetres' length lasted in all its parts about two seconds; in the second section of twelve centimetres' length the contraction lasted about five seconds; the duration of the contraction of the third section was from six to seven seconds. Thus the beginning of the contraction, as well as the end of it, occurs in each entire section simultaneously.

If we add to these three sections of the œsophagus the upper two sections of our canal—*i. e.*, the mylo-hyoid and the other muscles of the mouth as the first and the pharynx as the second section—we may then state that the whole canal is divided into five sections. At the beginning the mylo-hyoid muscles contract and relax with great rapidity; then, three tenths of a second later, a somewhat prolonged contraction of the pharyngeal muscles follow. After an interval of nine tenths of a second the œsophagus commences to contract in its three sections, as stated above.

Another point of interest is the development of the contraction in each section. While the mylo-hyoid muscles contract rapidly, we observe that in the following sections the development of the contraction to its maximum occurs the slower the longer the contraction lasts, or, what is the same here, the deeper the section is in the canal. And, as the thrusting power of a muscle depends on the quickness with which the contraction reaches its maximum, it follows that the deeper the section of our canal, the less its thrusting power.

I wish here to remind you that there is indeed somewhat of a basis in the anatomical structure of the human œsophagus for the physiological differences just established in the several sections. The upper third of the œsophagus, as is well known, contains only striated muscle fibers; the middle part contains striated as well as plain muscle fibers; while the muscular sheath of the lowest part is made up of plain muscle fibers only.

The whole theory now presents itself as follows:[*] A fluid or soft morsel is usually thrown down by the contraction of the mylo-hyoid muscles through the entire length of the deglutitory canal, before the contractions of the other sections occur. The contractions of all the other sections follow, nevertheless, after each deglutition, in the manner described above. The value of these contractions is only that of a reserve power—*i. e.*, if, for some reason, a part of the morsel remains in any of the sections, the contraction of this section will convey it further down. A dry bolus, however, can certainly not be thrown down, and its conveyance through the deglutitory canal probably, indeed, occurs by transmission from one section to the other. It should be remembered, however, that the food swallowed by human beings is usually in a semi-solid state, and a dry bolus forms the exception; while in animals whose food is usually very dry, like rabbits, for instance, the transportation by peristaltic movements of the œsophagus is probably the rule. But it is interesting to note that in these animals the thick muscular coat of the œsophagus consists exclusively of striated fibers, in accordance with which we here find that the peristaltic wave reaches the stomach already two seconds after the beginning of deglutition. This goes to show that the wandering of the food through the thoracic part of the alimentary tube has to occur quickly, and this is usually effected, according to the character of the food of the animal, either by throwing the food down through the œsophagus, or by a quick peristaltic movement of the latter, as a longer stay of a bolus within the thoracic cavity may interfere with the functions of the organs located therein.

To the five sections of the deglutitory canal we may now add the cardia. The movements of this latter section I have not, for various reasons, been able to study in my own œsophagus. But in a rabbit this part is very well accessible to our observation, and there we have indeed seen how after each deglutition at the end of the peristaltic wave the cardia sets in with a characteristic motion;[†] at first a strong circular contraction appears, and immediately afterward a deep diving of the entire cardia into the stomach follows. The entire phenomenon reminds one of the manipulations employed to press down the contents of a filled bag. In fact, the contractions of the cardia do not aid as much the transmission of the food from the œsophagus into the stomach as they serve to keep the passage into the stomach free from accumulation of the swallowed mass. I shall state here briefly that even at rest the cardia is in a state of tonic contraction.

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[*] Meltzer. Ueber die Vorgänge. Du Bois-Reymond's *Archiv*, 1880, p. 447.

[*] H. Kronecker u. S. Meltzer. Der Schluckmechanismus, seine Erregung und seine Hemmung. Du Bois-Reymond's *Archiv*, 1883, Supplementband.

[†] Meltzer. Ueber den Schluckact und die Rolle der Kardia bei demselben. Verhandlungen der physiologischen Gesellschaft zu Berlin, 1881, p. 74. Du Bois-Reymond's *Archiv*, 1881.

While striving to find a plainer method by means of which at least our main results could be confirmed, I came to discover,[*] or rather rediscover,[†] the sounds of deglutition heard in the stomach. When we put a stethoscope on the epigastrium at the left side of the ensiform cartilage, we hear in all normal persons, six or seven seconds after the beginning of a single deglutition, a well-marked prolonged murmur or sound, as if fluid mixed with air is being pressed through the cardia. As six seconds after the beginning of deglutition is just the time when the last section of the œsophagus commences to contract, we may rightly entertain the view that the mentioned sound is due to the contraction of this section. In a few persons, however, a sound could be heard at the very beginning of the deglutition. This sound differs greatly in its character from the former sound. It makes the impression as if fluid were squirted into the stomach. I named both sounds according to their character: the first, *press sound* (*Pressgeräusch*); the other, *squirt sound* (*Spritzgeräusch*). The squirt sound was also called the first, and the press sound the second, because the one comes at the beginning, the other at the end of deglutition. In connection with these sounds of the stomach it shall be stated further that nearly simultaneous with the beginning of deglutition a sound can be heard at the left side of the spinal column, from the fifth cervical to the ninth dorsal vertebra. The presence of these sounds was discovered by Hamburger.[‡] Now we have in the presence of these sounds a confirmation of at least two main points of our experimental results. The presence of a constant sound as deep as the ninth vertebra, at the very beginning of deglutition, proves that the morsel is indeed thrown down to the very end of the œsophagus at the very beginning of deglutition; while the constant presence of the press sound in the stomach about six seconds after the beginning of the deglutition indicates the constant sequence of the so-called peristaltic movement and its arrival in the last section of the œsophagus about six seconds after the beginning of deglutition. I shall not enter here into a further discussion of the meaning of the sounds in the stomach, as it is still a matter of controversy between ourselves and C. A. Ewald, which I intend to take up more fully at another opportunity.

We have stated above that after each deglutition the contraction of the œsophagus followed in a constant and precise manner. We have seen that, for instance, three seconds after the beginning of deglutition, the middle section of the œsophagus begins to contract and remains contracted for about five seconds. But as we certainly sometimes do swallow again before the lower sections of the œsophagus are relaxed, the question arose, How then could the morsels pass through the contracted sections? The experimental answer to this query brought to light highly interesting facts, which are briefly stated as follows:[*] If a number of deglutition acts followed one another in rapid succession, then the peristalsis did not follow after each deglutition, but appeared after the last one, as if this had been the only one. If the deglutition acts followed one another in intervals of less than a second and a fifth, the entire œsophagus, including the first section, remained relaxed until a second and a fifth passed after the last swallow. If, further, the deglutition acts followed one another at intervals of more than a second and a fifth but less than three seconds, the first section of the œsophagus contracted, but the second and third sections remained relaxed. If, finally, the interval between the deglutition acts was larger than three seconds, but less than six, the first and second sections contracted, but not the third. If a deglutition act occurred while any of the sections commenced to contract, the contraction had then its normal course, and the second contraction followed as if the deglutition had occurred after the contraction had stopped. For instance, if the deglutition act took place right in the beginning of the contraction of the second section, the contraction of this section lasted as usual about five seconds, and then followed an intermission of three seconds, after which this section contracted again. These results have been ascertained by the curves obtained from my œsophagus by the method described above. We can establish the main phenomenon of our statement also through the gastric press sounds. If we listen at the epigastrium while many deglutition acts follow one another with greater or less rapidity, we hear the press sound only six seconds after the last deglutition act.

As a minor fact only I shall mention here that the morsel indeed shoots down even through a contracted section of the œsophagus, as we have observed in our experiments, and as it can be well established by listening to the sound alongside the spinal column.

What does our main phenomenon signify? While the sequence of the peristaltic movements of the œsophagus, after a single deglutition act, can neither be destroyed nor even interrupted or delayed, we see that the entire peristalsis, or a part of it, is inhibited at the moment another deglutition act appears; in other words, the peristaltic movements pertaining to one deglutition act are inhibited by the appearance of another one. The disappearance of the peristalsis is, then, an inhibitory phenomenon, and each deglutition act exercises an inhibitory influence upon the parts belonging to the mechanism of deglutition. The inhibitory wave apparently sets in just at the beginning of the deglutition, as the appearance of the deglutition in a small fraction of a second before the beginning of the contraction is sufficient to inhibit just this contraction. But as the inhibition belonging to each deglutition act does not suppress the contractions pertaining to the same act, we have then to presume that the wave of inhibition is of very short duration.

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[*] Meltzer. Schluckgeräusche im Scrobiculus cordis. *Ctrlbl. für die medicinische Wissenschaft*, 1883, No. 1. Zu den Schluckgeräuschen. *Berliner klinische Wochenschrift*, 1884, No. 30.

[†] See Nathanson. *Ctrlbl. für die medicinische Wissenschaft*, 1864, p. 834, and W. Zenker, *Allgemeine Zeitschrift für Psychiatrie*, 1869, p. 467.

[‡] W. Hamburger. Die Auscultation des Oesophagus. *Medicinische Jahrbücher*, 1868, p. 145.

[*] H. Kronecker und S. Meltzer. Ueber den Schluckmechanismus und dessen nervöse Hemmung. *Bericht der königl. Academie der Wissenschaft zu Berlin*, January 24, 1881.

The existence of the phenomenon in question we have also observed in animals, in dogs as well as in rabbits. In the latter animal the cardia again is the proper part for observation.[*] As the entire duration of the peristaltic wave in a rabbit is not more than two seconds, the deglutition acts have to follow one another in less than this time. But as it is hard to induce a rabbit to swallow in a natural way with the desired rapidity, we have produced the rapid deglutitions by electrical stimulations of the central end of the superior laryngeal nerve. We were then able to establish the fact unmistakably that in rapid deglutitions the contraction of the cardia takes place only after the last deglutition act. Here, however, we observed another important fact. The cardia, which is usually in a state of tonic contraction, gets somewhat relaxed at the very beginning of each deglutition, and these relaxations increase with the greater number of rapid deglutitions. The relaxations are usually small and can be overlooked, but they can be brought out more clearly by the following arrangement: When a rabbit is made to swallow by stimulations of the superior laryngeal nerve, each swallow carries only air into the stomach; after a while there is in the stomach a considerable amount of air which stands under high pressure; its escape is prevented by the firm contraction of the cardia. If, now, the cardia relaxes, the air shoots into it and tends to dilate it. By this means we are well able to recognize the relaxation which takes place in the cardia with each deglutition act, and also the increase of these relaxations with the rapid succession of the deglutitions.

These relaxations of the cardia at the beginning of each deglutition demonstrate clearly the presence of an inhibitory function in the mechanism of the deglutition.

What is the mechanism of the deglutition, what causes in the first place the precise sequence of the contractions of the several sections? Marshall Hall [†] thought that the bolus, while passing down the œsophagus, irritates the mucous membrane and thus causes the contractions of each place. But we have seen that the morsel passes down long before the contractions set in. We know further that the section of the vagi wipes out the peristalsis, while the stimulation of their peripheral ends produces a simultaneous contraction of the entire œsophagus, but not a peristaltic wave. The movements therefore can not be caused by the passing food, nor is their cause located within the gullet itself. Another theory was advanced by Wild [*] and Ludwig. The contraction of an upper part, they say, gives rise by the way of reflex to the contraction of the adjoining lower part. The basis for their theory they found in the experiments they report—namely, that ligation or severance of the gullet excluded the peristaltic movements from the gastric end of the œsophagus. But experiments made later by A. Mosso [†] have shown a reverse result. We [‡] have often repeated Mosso's experiments, and constantly obtained results similar to Mosso's. Even after removing the greater part of the œsophagus in a rabbit, we observed the cardia contract in due time after each deglutition. This shows unmistakably that the cause of the sequence of the contractions is located entirely in the center of deglutition. When at the beginning of the deglutition an afferent impulse was once conveyed to the center of deglutition, it ran then the predestined course, sending out efferent impulses to each section of the gullet in due time, independent of the responses of the corresponding sections. Deglutition is then a single reflex act, with only one afferent impulse and many efferent nervous paths.

The next question is, In which part does the afferent impulse originate, and by which nerve is this impulse transmitted to the center? Concerning the latter point, I have already mentioned above that by the stimulation of the superior laryngeal nerve the deglutition can be promptly effected. The discovery of this fact has some interesting history. When Rosenthal [#] discovered the inhibitory effect of stimulation of the laryngeal nerve upon respiration, he noticed that during the stimulation there were some peculiar motions of the larynx, but he thought them to be of a respiratory character. It was not till some years later that Bidder [‖] and Blumberg recognized the true nature of these motions. They established the fact that stimulation of the laryngeal nerve produces deglutitions. But they again report that, after deglutitions brought on by stimulation of the laryngeal nerve, no peristaltic motions were seen to be following in the œsophagus, which statement is, of course, not true so far as it concerns a single deglutition act. The true meaning of their observation, however, is apparently this: any stronger stimulation of this nerve brings on quite a series of rapid deglutitions, and, as we have seen, under such circumstances the peristalsis does not follow any of the deglutitions except the last. Thus far they were correct in stating that, in the great majority of deglutition acts, no peristalsis followed. The last peristaltic movement, however, they have either entirely overlooked or considered it as an exception which does not break the rule. They have then probably seen the phenomenon of inhibition long before us, but did not understand the true meaning of it. In this connection I shall mention that Arloing [△]

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[*] Meltzer. Ueber den Schluckmechanismus u. s. w. Du Bois-Reymond's *Archiv*, 1881.

[†] Marshall Hall. *Lectures on the Nervous System and its Diseases*, London, 1836.

[*] Wild. *Zeitschrift für rationelle Medizin*, 1846, p. 76.

[†] A. Mosso. Moleschott's *Untersuchungen*, vol. xi.

[‡] *Loc. cit.* Du Bois-Reymond's *Archiv*, 1881.

[#] Rosenthal. *Die Athembewegungen und ihre Beziehungen zum N. Vagus*, Berlin, 1862.

[‖] F. Bidder. Beiträge zur Kenntniss der Wirkung des N. laryngeus. Reichert's u. Du Bois-Reymond's *Archiv*. 1865.

[△] S. Arloing. *Application de la méthode graphique à l'étude du mécanisme de la déglutition*, etc. Thèse, etc., Paris, 1877.

also observed this fact before us, but did not enter into further explanations of it; and it is just its interpretation which gives prominence to our phenomenon.

Now, the superior laryngeal nerve, though very effective in artificial stimulations, is certainly not the carrier of the natural impulse. Wassilieff[*] has cut the nerves on both sides without affecting in the slightest the natural deglutition. It should be mentioned that stimulation of the mucous membrane of the larynx is very rarely responded to by a deglutition act.

The other nerves which could come into consideration are the glosso-pharyngeal and the trigeminal nerves. Of the first nerve it has long ago been known that its section does not interfere with, and stimulation does not produce, deglutition. But also of the trigeminal nerve it has lately been shown by Wassilieff[†] and confirmed by Marckwald[‡] that the successful intracranial section of both trigeminal nerves does not wipe out natural deglutition. We must then state that the question as to which of the nerves is the carrier of the afferent impulses producing natural deglutitions is not yet satisfactorily settled.

In a somewhat better position we seem to be respecting the carrier of the inhibitory impulse. By a series of experiments on dogs and rabbits, we—Professor Kronecker and myself[#]—came to the conclusion that the glosso-pharyngeal nerve was probably the afferent nerve for the inhibitory impulse. If the glosso-pharyngeal nerve is stimulated simultaneously with the superior laryngeal nerve, the success of the latter stimulation is visibly impaired. A stronger stimulation of the glosso-pharyngeal nerve seems even to annihilate the effect of the superior laryngeal nerve for some time. These experiments have been repeated and confirmed by Wassilieff.[‖]

Concerning the parts where the natural impulses originate, Wassilieff[△] reports that in rabbits deglutition can invariably be induced by tactile stimulation of a circumscribed place in the oral surface of the soft palate. Wild[◊] and Ludwig, on the other hand, report that they could best produce deglutitions by touching the rhinal surface of the soft palate. In human beings, according to Wassilieff, no place could be found from where deglutitions could be produced promptly by tactile stimulations.

Apparently the experiments on the origination and transmission of the afferent impulses of the deglutition act leave yet ample room for further study.

A more satisfactory progress I am able to report concerning the localization of the center of deglutition. It was always placed in the medulla oblongata, but merely on anatomical grounds. In order to establish this view on an experimental basis, we severed the medulla from its upper and lower connections. The deglutition remained intact so long as the artificial respiration was continued. On the other hand, the destruction of the medulla also destroyed the deglutition. For the special localization of the center within the medulla an experiment of A. W. Volkmann[*] seemed to me to be very instructive. In an experiment Volkmann has seen the deglutition disappear after removing the brain, and he came to the conclusion that deglutition was mainly a voluntary act. Volkmann offers the fact that the respiration was not disturbed as a proof that he did not destroy the medulla. As we now positively know that the removal of the cerebrum does not affect the deglutition, I have come to the conclusion that Volkmann had indeed taken away a part of the medulla which contained the center of deglutition, and that this center has its place above the center of respiration. In my experiments on respiration I once, indeed, succeeded in dividing the medulla between both centers; stimulation of the superior laryngeal nerve in this case produced only inhibition of respiration and no deglutition.[†] The exact location of the center has been recently established by M. Marckwald.[‡] In a series of sections through the medulla, Marckwald found that the location of the center of deglutition is just above the alæ cinereæ. A section through this place destroyed the reflex of deglutition without affecting the respiration. On the other hand, circumscribed destruction of the center of respiration did not affect deglutition.

After we established the fact that with each deglutition a wave of inhibition rapidly spread through the entire center, the question arose before me whether this inhibition did not irradiate into the neighboring spheres—*i. e.*, whether the other centers of the medulla were not affected by this inhibition wave.[#] My attention was first turned toward the cardio-inhibitory center within the medulla oblongata. The function of this center is to keep up the inhibitory influence of the vagus upon the heart. The effect of inhibition upon this center would then be to lessen the tone of this center, and that means to increase the number of the heart beats. This, indeed, I found to be the case. A single act of deglutition already perceptibly increases the pulse rate. The increase is constantly followed by a less pronounced decrease. Both effects are more pronounced when a series of deglutitions follow one another in very short intervals. A pulse rate of seventy-two can be increased to a hundred and then decreased to fifty-six. This influence of the deglutition upon the heart-beat is dependent neither upon the amount nor upon the character or temperature of the swallowed mass. It is influenced only by the reflex act and the summation of these acts; the larger their number and the smaller the intervals between the

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[*] Wassilieff. Wo wird der Schluck ausgelöst? *Zeitschrift für Biologie*, 1887, Bd. vi, p. 29.

[†] *Loc. cit.*

[‡] M. Marckwald. Ueber die Ausbreitung der Erregung und Hemmung vom Schluckcentrum auf das Athemcentrum. *Zeitschrift für Biologie*, N. F., Bd. vii.

[#] Ueber den Schluckmechanismus und dessen nervöse Hemmung. *Bericht der Berliner Akademie der Wiss.*, January, 1881.

[‖] Wassilieff. *Loc. cit.*

[△] *Loc. cit.*

[◊] Wild. *Loc. cit.*

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[*] A. W. Volkmann. Müller's *Archiv für Anatomie und Physiologie*, 1841, p. 332.

[†] The curves F^1 and F^2, on Plate ix (in my article, Die Athemhemmenden- und -anregenden Nervenfasern innerhalb des Vagus, etc., in Du Bois-Reymond's *Archiv*, 1892, p. 340) demonstrate this fact. See there my remark on page 406.

[‡] Marckwald. *Loc. cit.*

[#] Meltzer. Die Irradiationen des Schluckcentrum und ihre allgemeine Bedeutung. Du Bois-Reymond's *Archiv*, 1883, p. 209.

acts, the greater their influence upon the cardio-inhibitory center.

We have further observed an inhibitory influence of the deglutition upon the respiration. If we hold our breath until we experience a degree of dyspnœa, the uneasiness is then relieved for a certain time by rapid drinking. We can see the suspension of the respiration during rapid drinking even in a tracheotomized animal. The deglutition exerts an inhibitory influence also upon the tone of the vasomotor center; the pulse gets markedly softer during drinking. The fact has also been established by a more precise method. The inhibitory wave of the deglutition affects even functions the centers of which are located in the lumbar region of the spinal cord, like the contractions of the uterus or the erectio penis. In the latter case the deglutitory inhibition is efficient even when the cause is of peripheral origin, as in gonorrhœa, and is of practical value.

The depressing and soothing effect of a rapid succession of deglutition acts can also be observed in many pathological states—for instance, in certain forms of headaches, in asthma nervosum, in spasmus glottidis, etc. The relief in such cases is, of course, only temporary. In other conditions again, the inhibitory effect of the reflex of deglutition is indeed helpful, like in singultus or in syncope with slow heart-beat. A drink of water or some stimulating fluid is a popular remedy; but it is not the swallowed mass, it is the reflex of the act of swallowing which is the more effective factor. A tablespoonful of water drank in twenty swallows is more beneficial than a glass of wine poured down in large but few swallows. The stimulating effect of the alcohol can take place only through the medium of circulation, and after a lapse of time, while the increase of the pulse rate or the depression of a convulsive contraction occurs with the very act of swallowing.

I wish to mention that Wertheimer and Meyer[*] have recently confirmed my statements of the influences of the deglutitions on the cardio-inhibitory and respiratory centers, so far as the human being is concerned; in dogs, however, they state that the conditions are different; here the deglutitions retard the heart-beat. I have not yet found the opportunity to verify this statement.

In conclusion, I have to mention briefly another influence of the deglutition upon the respiration. If the movements of the diaphragm are recorded by a pneumograph, we observe that with each deglutition a short, sharp descent of the diaphragm, an abortive inspiration occurs. This has been observed by Waller and Prevost,[†] myself,[‡] Steiner,[#] Knoll,[‖] and M. Marckwald.[Δ] All now agree as to the active nature of this contraction, but I shall not discuss the explanations given by the different writers as to the origin of this phenomenon. I believe that none of the explanations given, including my own, covers the ground.

INTRODUCTION TO THE DEBATE ON MENSTRUATION

BEFORE THE MEDICAL SOCIETY OF THE STATE OF NEW YORK
AT ALBANY, *February 6, 1894*,
WITH REMARKS CONCERNING NORMAL MENSTRUATION.

By ANDREW F. CURRIER, M.D.

In introducing this familiar subject in the form of a debate before this learned society my only apology, if apology were essential, is its everyday importance. Whether we are general practitioners or so-called specialists, there are few morbid conditions which we are called upon to investigate in women between the periods of puberty and the menopause in which the influence of menstruation may not enter as an important factor. Particularly in recent years, which have seen the wonderful development of the art of abdominal surgery, have the bearings of this function upon the general economy of the individual been the subject of much reflection and discussion, and not a little light has been contributed by the workers in this field.

I deem myself fortunate in being honored as usher or herald to the eminent gentlemen who will take part in this discussion. My work is mainly introductory, but I shall also beg to be allowed to make a few elementary remarks concerning the genesis of the menstrual function, and the normal performance of the same.

As animal life evolves from the lower to the higher we observe increased complexity of structure and function. The simple structure of an amœba, or of any of the forms of primitive life, is all that is necessary for its life work. As we reach relatively higher forms, like the polyp or the oyster, we find greater differentiation of structure for the relatively greater field of work. The same law continues as we advance to the stage of the higher vertebrates, and finally reach in man the ultimate which has been foreshadowed in the types and forms which have led up to him. The differentiation of the genital organs in individuals of separate sex begins very early in the scale of animal life, and the functions connected with those organs become more marked as we ascend the scale. Thus we pass from the *ovipara*, with their different gradations and varieties, to the *vivipara*, finally ending again in man. The phenomena connected with the impulse to reproduction in animal life are as clearly defined as any in the whole range of animal activity, and demonstrate the important relation which that impulse bears to physical existence.

The period or season of its occurrence is definitely fixed, due allowance for variations being understood; the vascular and nervous systems participate in a condition of irritation and excitement—in fact, the entire appearance and behavior of the individual undergoes a change. Some of the insects change their color when the reproductive impulse influences them; reptiles and fishes show unusual excitement, increase of glandular secretions, and hyperæmia of the genital organs; birds have brighter plumage. In the higher mammalia there is present at such a time not only a change in their appearance and behavior, but a discharge of mucus, or mucus and blood, from the genital passage. It has been observed in mares, sows, ewes, asses, bitches, and cats, though it is less profuse in those animals which have hollow uteri than in those with thick and solid uteri resembling those of the human female. In the apes and monkeys—the animals nearest man—hæmorrhage from the vagina has been frequently observed, and in some instances it occurred with the same periodicity as in women. These statements have all been fully substantiated by the most accurate and intelligent observers of animal life (Buffon, Cuvier, Saint-Hilaire, Ehrenberg, Raciborski).

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[*] E. Wertheimer et E. Meyer. Influence de la déglutition sur le rhythme du cœur. *Travail du laboratoire de physiologie de la Faculté de médecine de Lille*, 1er avril 1890.

[†] Aug. Waller et J. L. Prevost. *Archives de physiologie normale et pathologique*, 1876, pp. 185–197, 343–354.

[‡] *Irradiationen*, etc., p. 228.

[#] I. Steiner. Schluckcentrum und Athmungscentrum. Du Bois-Reymond's *Archiv*, 1883.

[‖] Knoll. *Sitzungsberichte der Wiener Akademie*, 1882.

[Δ] Marckwald. *Loc. cit.*

It appears, therefore, that the reproductive impulse is not only associated with decided congestion of the generative organs, but with a more or less abundant discharge of blood, particularly in the higher animals. The culmination of the animal series is man, and in woman we have not only the reproductive impulse accompanied with the bloody discharge, but we have it at fixed and relatively frequent intervals; we may even have the reproductive impulse and impregnation without the bloody discharge,* and almost immediately after the conclusion of a previous pregnancy; † finally, as the evidence of the highest development in this direction, we may have the continually recurring bloody discharge without the reproductive impulse. ‡

The terms menstrual and menstruation indicate that the function referred to recurs with monthly intervals intervening. There has been much ingenious speculation as to the reason for this particular interval—the menstrual wave, the menstrual cycle, etc., being carefully elaborated—but the ultimate facts are elusive. Some hints, wanting in definiteness, however, may be gathered from comparative zoology. Until we reach the primates the pelvic organs in most of the mammalia lie in the horizontal plane of the body. Sexual intercourse occurs only, as a rule, when the female is not pregnant, and its sole object is apparently the induction of pregnancy. With the primates, the erect posture being customary, the position of the pelvic organs is changed, and also the conditions of the pelvic circulation. Sexual intercourse, at least so far as man is concerned, is practiced without reference to the presence or absence of pregnancy. The repeated congestions accompanying the frequent performance of the sexual act may, at some time in the remote past, have tended to produce periodical increase in the tension of the pelvic circulation, and the discharge, which previously occurred only with or before sexual intercourse, may then have transferred its appearance to the occasion of increased vascular tension.

Or we may adopt the theory of Pouchet, that the period of a lunar month is essential for the formation of a decidua, and that if in this decidua an inseminated ovum is not implanted, the object of the decidua would be at an end and degeneration and hæmorrhage would result.

The theory of Pflüger, that the periodical rupture of a Graafian follicle, with the attendant discharge of an ovum, hæmorrhage from the ovary, and pelvic congestion, are the essential elements in menstruation, is a very reasonable one, for in countless cases conception is referred with great probability or even certainty to the period immediately subsequent to menstruation; but the argument is not conclusive, for the discharge of *ova* is now believed to occur quite independently of menstruation, possibly from a very early period of life, and it is known that it continues in some cases long after menstruation has ceased.*

The satisfactory explanation of the recurrence of menstruation at definite monthly intervals, therefore, remains to be presented.

The appearance of menstruation in a girl is usually accepted as evidence of maturity or womanhood. It is only one of the evidences, however, for associated with it are the development of the external genitals and the rounding of outline of the entire figure. It may be absent, maturity of the reproductive power being present notwithstanding. In civilized society it is usually regarded as a safe rule that one who has never menstruated, having reached the proper age to do so, is physically defective in some way, either on account of disease in early life or on account of some fault of structure. It does not follow that such a condition is irremediable—in fact, we know that in many cases it is not. Women who are thus affected ought not to marry until the actual condition of their generative organs has been ascertained and the cause of their defect removed if possible.

As menstruation is one of the evidences of maturity, it will make its first appearance at different ages in different parts of the world, for all women do not mature equally early. Those who lead a natural life will usually mature earlier than those who live artificially, though this rule is sometimes reversed; savages earlier than highly civilized women, inhabitants of warm climates earlier than those in cold, the analogy from vegetable life holding good; those living at high altitudes earlier than those at the seacoast. There are also peculiarities as to races, nations, and families which exert a modifying influence the same as in trees and plants. In this latitude the first menstruation seldom appears earlier than the thirteenth or later than the fifteenth year.

An analysis of two hundred cases from my private records, in which the nationality and age of first menstruation had been recorded, gives the following data:

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* This is seen in the frequent examples of those who become pregnant before they have ever menstruated. Among the Eskimos this is a very common fact, according to Dr. F. C. Cook, recently physician to the Peary expedition.

† In the *New York Journal of Gynæcology and Obstetrics* for January, 1894, p. 125, is the account of a woman who bore a child July 4, 1892, had connection with her husband July 8th, and two hundred and forty-three days later was again delivered of a healthy child.

‡ This is seen in the case of women who do not marry, who devote themselves entirely to intellectual pursuits and continue to menstruate without the presence or the annoyance of the reproductive impulse.

* Evidences of ovulation have been found in the ovaries of very young children. It has already been stated that there are many instances in which conception and delivery at term have occurred in those who have never menstruated. Cases are also reported in which conception and delivery at term have taken place years after the occurrence of the menopause. The writer is personally cognizant of three cases of this character, in one of which conception took place fourteen years after the menopause.

Nationality.	Number of cases.	Average age of first menstruation.
America	110	$14\frac{1}{8}$
Ireland	43	$14\frac{3}{4}$
Italy	11	$15\frac{7}{11}$
Germany	11	$15\frac{7}{11}$
France	5	$12\frac{3}{5}$
England	4	14
Sweden	4	$16\frac{1}{4}$
Austria	3	$15\frac{2}{3}$
Canada	2	14
Scotland	1	16
Nova Scotia	1	18
Denmark	1	17
Russia	1	19
Switzerland	1	19
Poland	1	16
Greece	1	13

Of the two largest series of cases, one American menstruated first at ten, five at eleven, nine at twelve, twenty-eight at thirteen, twenty-six at fourteen, eighteen at fifteen, thirteen at sixteen, five at seventeen, and five at eighteen; total, one hundred and ten.

Four Irish menstruated first at twelve, five at thirteen, fifteen at fourteen, six at fifteen, six at sixteen, four at seventeen, one at eighteen, one at nineteen, and one at twenty.

Nationality.	Date of earliest first menstruation.	Date of latest first menstruation.
Americans	10	18
Irish	12	20
Italians	13	18
Germans	13	18
French	11	15
Swedish	15	20
English	13	16

Average age of first menstruation for the entire two hundred cases, 14·5+ years.*

No function of the body presents a wider range and variety of phenomena than menstruation; no function is more frequently disturbed. The complex conditions of civilized life are probably responsible for this, since the variations are few among those who are free from such conditions. Faults of structure, errors of diet and hygiene, disease in early life, exposure, fatigue, excesses of all kinds, act and react in producing a complex out of a simple function. The tension of the vessels in the pelvic circulation being increased as the period of menstruation approaches and the capillaries of the endometrium furnishing the area of least resistance, a discharge of blood within that area is the result. The quantity of blood lost will vary with the extent and continuance of the tension—the *vis a tergo*—with the area and resistance of the endometrial vessels, and with the pressure exercised by the uterus to restrain and check the flow. A firmly contracting uterus may check the flow both suddenly and effectually, as is sometimes seen after the administration of a dose of ergot or the influence of low temperature. An extensive new growth, such as myoma or cancer, may cause profuse flowing when added to the increased vascular tension of the menstrual period. With the blood is mingled the *débris* of broken vessels and the surface epithelium of the uterus and vagina over which the blood flows. The increased congestion of the uterus and vagina signifies increased activity in their glandular structure, and therefore increased discharge of their secretions. In this way the products of menstruation are accounted for.

The duration of menstruation is subject to many fluctuations, and is influenced and modified by many factors. It has almost as many types as there are variations in the number of days which it consumes. Reference has already been made to the "menstrual wave." This term implies an onward movement, a gradual increase of flow until the maximum is reached, and then a gradual decline or recession until the ordinary conditions of the pelvic circulation recur. But there are very many cases in which a discharge of blood is not the only phenomenon of menstruation. These accessory phenomena constitute the so-called *molimina* of menstruation, and may precede the appearance of the flow for many hours. A complete menstrual period or experience consists, therefore, in *molimina* plus flow, and may continue from a day to a week, or even slightly longer.

In the one-day type the flow is scanty and the blood deficient in coloring matter—in fact, it is principally serum—and there may be scarcely enough of it to soil a single napkin. The other phenomena in this type of menstruation are usually very pronounced, especially cramps in the uterus, pain in the loins, and headache. It occurs in women with imperfectly developed uteri; in the anæmic, especially in the young; and in those who suffer with chronic diseases, such as pulmonary phthisis and nephritis.

In the two-days' type the flow of blood may be free and of natural appearance the first day; the second it is scanty and watery. It is usually preceded by pain, as in the one-day type, and has anatomical conditions similar to that. In the three-days' type the conditions may be quite normal as to the quantity of blood lost and the general condition of the patient from beginning to end, the flow reaching its maximum on the second day, then gradually ebbing and disappearing. Or there may be pain during the first day or two, varying in severity with the general and local physical conditions of the individual. Profuse hæmorrhage is seldom a marked feature of this type.

In the four-days' type the conditions may also be quite normal as to flow, pain, and general or local disturbance. This and the three-days' type include the great majority of cases in which the function is performed naturally. But it also includes many cases in which hæmorrhage is abundant, cases in which the uterus is the seat of endometritis, malignant disease, or some other morbid condition. Pain is a much less prominent feature than weakness and exhaustion with such cases. The type lasting five to seven days is not usually so distinct as those of shorter duration. It may not be accompanied by any particular disturbance, nor leave the patient particularly weak or exhausted at its close. Should it continue a week, there is often little more than a mere stain the last day or two, without other manifestations. In some cases the flow and other symptoms cease entirely on the third or fourth day, recurring after an interval of a few hours, and continuing from one to three days longer.

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* With the exception of the American series of cases, the numbers are, of course, too small in these tables to warrant any deductions as to national peculiarities.

Those who flow profusely five to seven days or longer are almost invariably sufferers with uterine disease of a more or less serious character. They can not properly be said to illustrate a type of menstruation, since menstruation is only an incident which for the time serves only to intensify their morbid condition.

A discharge of blood may be the only evidence to a menstruating woman that she is experiencing anything out of the usual course. Women who lead an out-of door life, who are robust and well developed, women who are without high nervous organization and are not very sensitive to pain, and women who are so intensely occupied that they seldom think of their own physical condition, may be ignorant, so far as their own experience is concerned, of the so-called menstrual molimina. Unfortunately, this can not be said of a great multitude of women, some of whom are well formed, more of whom are defectively formed or diseased. To them menstruation means not only a discharge of blood, in greater or less abundance, but a multiplicity of attendant discomforts and annoyances, which may amount even to the most intense physical or mental suffering. The term *molimina* is often applied to these bad sensations collectively. They are due mainly to the combined action and reaction of the vascular and nervous systems, especially to increased vascular tension and congestion, which may be regarded as the chief distinguishing feature of the function of menstruation. If this tension is not relieved through the natural channel, the pressure gives rise to pain. As the vascular tension radiates away from the pelvis, the organs and tissues which are brought within the area of its influence respond to its stimulus, and pain or other sensations of discomfort are the result. Thus we obtain the well known variety of sensations in the pelvic organs, the liver, the kidneys, the stomach, the intestines, the brain, the skin—in fact, there is scarcely an inch of the body which may not react to the unpleasant impulses of the disordered function. The mental function, digestion, secretion, assimilation, may also be sharers in the disturbance, and the statement of its far-reaching possibilities for annoyance is sustained.

Thus we see that any existing morbid condition may be intensified as often as menstruation recurs. This fact is of great importance, for it should teach us to be on our guard to anticipate the evil consequences which may arise. It should teach us to guard against hæmorrhage in the presence of existing uterine disease, to insure rest, and other suitable precautions, if there is a tendency to mental disease or disease of the viscera or the skin, and, in general, to keep the patient under the most favorable conditions possible before and during the entire performance of the menstrual function.

From this review of the situation it may not be out of place to urge that it is the duty of the family physician to pay more attention than has heretofore been given to the instruction of the women, and particularly the young, who are under his care, concerning the precautions which they ought to exercise both before and after menstruation has been established. We can not be too particular and precise in this matter when we reflect that so large a portion of the disease which is peculiar to women arises from errors in connection with this function. Is there not a responsibility resting upon us which should induce us to insist that such errors and imprudence may no longer be practiced without our vigorous and persistent protest?

159 East Thirty-seventh Street.

SENSORY AND PSYCHICAL EPILEPSY.*

By THEODORE DILLER, M. D.,
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PHYSICIAN TO THE INSANE DEPARTMENT OF ST. FRANCIS'S HOSPITAL.

Most modern writers upon epilepsy (Gowers, Gray, Hirt, Dana) speak of certain mental disturbances which may precede, merge into, follow, or at times take the place of an epileptic convulsion. For instance, certain dream states may precede the typical attack, or automatic actions may constitute the attack itself; "epileptic mania" or automatism may succeed the attack, procursive epilepsy (running movements) may precede or take the place of typical attacks, etc. Nearly all who consider this subject seem to regard the motor convulsion as the most characteristic symptom (for it is always a symptom) of an epileptic attack. Only rarely is this symptom absent. Yet it is well known that an epileptic fit may occur characterized by no motor explosion whatever. Such attacks are regarded as rare, as bizarre, and are spoken of as *epileptic equivalents* (psychical epileptic equivalent, sensory epileptic equivalent, etc.), thus bearing witness to the idea that the motor explosion is generally regarded as the most characteristic phenomenon of epilepsy, if indeed not carrying with it the idea that the motor convulsion is the disease itself. It seems to me that our progress in the study of epilepsy is much retarded by the almost universal prevalence of this view.

The various symptoms of epilepsy, whether motor, sensory, or psychical, are due, it is now generally conceded, to sudden discharges of nerve force. This discharge may be due to disease of the nerve cells which discharge or to the inhibitory cells which normally control the discharging cells, or to a combination of both causes. This theory is borne out by the important investigations of Bevan Lewis,† who finds very constantly in the brains of epileptics fatty degeneration, or, in advanced cases, vacuolation of the angular or inhibitory cells occupying the second layer in the motor cortex. It is doubtless true, as Gowers remarks,‡ that "the wide variety of auræ seem to show that the primary discharge may occur in various parts of the cortex." The almost constant presence of unconsciousness as a symptom in all varieties of epilepsy bears witness to the *suddenness* of the discharges; for, to again quote Gowers, "*sudden—i. e.*, instantaneous—derangement of the function of any part appears incompatible with the integrity of consciousness."

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* Paper read for the writer by Dr. M. L. Herr (Lancaster, Pa.) at the eleventh International Medical Congress, held at Rome, March 29 to April 5, 1894.

† *Text-book of Mental Diseases*, p. 522 *et seq.*

‡ *Diseases of the Nervous System*, vol. ii, p. 754.

Now the study of Jacksonian epilepsy shows that the initial movement in a motor convulsion (known as the signal symptom) points with great constancy to the cortical motor area for that movement as the seat of the greatest irritation. It further shows that the discharge originating in this center very frequently spreads to adjacent centers, and may in this way ultimately involve the entire one side of the patient, or, indeed, terminate in a general convulsion. It seems to me that these facts, taken in connection with our knowledge of the nature of epilepsy, point strongly to the probability that the initial symptom or aura, when there is one, points to the cortical representation of the disturbed part as the seat of the greatest irritation, just as the signal symptom does in Jacksonian epilepsy. But in essential epilepsy the discharge occurs more suddenly than in Jacksonian epilepsy, and consciousness is much more frequently lost. The discharge is communicated to adjacent areas with more rapidity and very generally involves the motor cortex if it does not arise in it, and, it seems probable, generally involves the entire cortex, or at least the greater part of it, before it ceases. Now in fits which begin with a psychical or sensory aura, the rapid supervention of unconsciousness and motor manifestations commonly obscures all other phenomena, rendering an investigation of them impossible, and the fit is said to be of the ordinary type.

In the same way fits which begin with motor manifestations unpreceded by aura are probably due to discharges beginning in the motor cortex.

If essential epilepsy were divided, as it seems to me would be warrantable with our present lights, into motor, sensory, and psychical, we would be in better position to scientifically study this much-studied but always interesting affection. If such a classification were adopted most cases of *petit mal* would resolve themselves into sensory epilepsies, while psychical epileptic equivalents, masked epilepsies, etc., would become psychical epilepsies.

As has been remarked before, the rapid supervention of unconsciousness and motor convulsions makes the study of sensory and psychical epilepsies very difficult. In the study of psychical epilepsy the observation of those cases in which convulsive motor symptoms are absent must in the present state of our knowledge prove of great value, and all such should be carefully recorded.

Pure psychical epilepsy is probably rare. It has been called "running epilepsy," epilepsia procursiva, and has been described by Mairet, Bourneville, Ladame, and others.

The case which I am about to relate would probably be described by some who have studied psychical epilepsy as one belonging to that class. But as there is a constant gustatory aura, I must, logically adhering to the classification which I have just advocated, call the case one of sensory epilepsy. The interesting features about the case are that while there are no motor convulsions, there are very apparent psychical convulsions preceded by a gustatory aura.

The case is as follows:

S. M. (referred to me by Dr. J. J. Buchanan, December 30, 1893), male, Hebrew, aged twenty-two years. He was employed as an iron-worker, and enjoyed excellent health up to the beginning of his present illness. He has never used alcohol or tobacco to excess; denies specific history.

Five months ago he was struck on the head, in the frontal region, by a pair of iron tongs in the hands of a fellow workman. The blow rendered him unconscious for a few minutes. He says no scar was left, but examination reveals the presence of one in the right frontal region near the median line. It begins just a little back of the line made by the junction of the hairy scalp with the forehead and extends vertically backward and outward for an inch and a half. After this blow he began to suffer from general headaches, which came on at first every two weeks. But since September 21, 1893 (the date of his marriage), these headaches have occurred almost daily. Sleeps poorly at night; dreams a great deal. For some weeks past has been worrying a great deal on account of being out of work.

Two months ago—*i. e.*, three months after the receipt of the injury referred to—he began to have peculiar "spells." These at first occurred once or twice a week, but rapidly increased in frequency, so that at the time I first saw him he was having four or five seizures daily. A "spell" is preceded by an aura, which he describes as a bitter taste in the mouth, and begins by restless or fidgety movements, accompanied by unconsciousness. He then walks up and down the room rapidly two or three times, making at the same time explosive utterances—*e. g.*, "This is a bad house! Let us fly from it!" "Rachel! let us get up and run off!" "See! see! the cars moving!" etc. He never falls or bites his tongue or suffers from any inco-ordinate muscular movements. His face changes during a fit, appearing to his wife "strange and yellow." The fits never last longer than a minute, and often less time. The explosive utterances differ in each attack, but the idea of *fear* seems to be constantly present. He will sometimes, but not often, give relevant replies to questions while in a fit. The spells terminate, leaving him slightly confused, but with no memory whatever of what he has said or done during them.

There has been, during the time the man has been under my care, some slight but constant elevation of temperature (99° to 99·6° F.), leading me to fear there may be a subacute or chronic meningitis in the region of the scar on the head.

That the seizures from which this patient suffers are epileptic can, I think, scarcely be disputed. The injury he received seems to have caused all the trouble. The record of the case speaks for itself.

Treatment, consisting in the use of the galvanic current and the administration of belladonna, bromides, and acetanilide, has caused the spells to recur with less frequency.

During the past ten days (February 24, 1894) he has had no spells, but complains of a constant coppery taste in his mouth, exactly similar to that which he experiences when the galvanic current is being passed through his head.

Westinghouse Building.

The Death of Dr. John H. Rauch, of Illinois, is announced as having occurred on Saturday, the 24th inst. The deceased was for several years the secretary of the Illinois State Board of Health.

HEMICRANIA
AND OTHER NEURALGIC AFFECTIONS OF THE HEAD RELIEVED BY INTRANASAL SURGERY.*

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AURIST AND LARYNGOLOGIST TO THE HOUSE OF THE GOOD SHEPHERD AND THE SYRACUSE FREE DISPENSARY;
MEMBER OF THE CENTRAL NEW YORK MEDICAL ASSOCIATION, THE SYRACUSE ACADEMY OF MEDICINE, ETC.

The object of this paper is not to set forth a dogmatic claim of priority in presenting the subject, or that all cases coming under the above title can be cured by intranasal surgery. I well remember patients that were under my care while in general practice where gynæcological treatment in some, and correction of digestive disorders in others, brought the desired result.

My proposition is this: that there *are* a *certain number* of cases that can be cured, or at least relieved, by the proper treatment of pressures and contacts within the nose. In support of this I will read you notes of a few of the cases that have come to my notice during the past three years:

Case I.—Mrs. K., aged thirty-two years, referred to me by Dr. M. on April 16, 1892. Good family history and in comfortable circumstances. General health rather poor, unable to do her own housework, but better than she was a year ago, the improvement being due, she thought, to treatment given her for uterine trouble.

She complained of severe paroxysms of sick headache two or three times a week, most of the pain being over the right eye and in the temple. During these attacks, pains streaked up from the bridge of the nose; the eye was swollen and the surrounding areas were tender. She also had rushes of blood to the head. The nostrils were not stuffed, but she had frequent droppings of mucus into her throat. This train of symptoms had continued, with varying degrees of severity, for four years. I examined her nose, and found that she had good breath space; sæptum straight, but both middle turbinates were enlarged, pressing against the sæptum and outer walls. The one on the right side had also become overgrown *downward*, and pressed *into* the inferior turbinated.

Treatment was at once begun and continued until September 1st, during which time I had operated upon each middle turbinated by the snare, removing the enlarged anterior portion and clipping off the lower border that was pressing into the inferior turbinated on the right side. At that date she had been free from the headache and neuralgia for three months and a half. She then went out of town for a short visit, and while there had one of her old-time attacks. Upon her return she came to me, and I found, by *deep* exploration with the probe, a large pyramidal-shaped osseous growth at the junction of the middle with the posterior third of the sæptum, high up, pressing against the inner surface of the right middle turbinated.

This growth had been entirely unsuspected, and even then was hidden from view by that portion of the turbinated body in front of it, though, as you will remember, I had already removed the enlarged anterior tip. I operated on this deep-seated growth with the electro trephine, December 20, 1892, since which time she has had no return of the headache or neuralgia until April 15, 1893. A short time before this I discovered that a small fibrous bridge was being formed between the inner surface of the middle turbinated and the area upon which the growth had been located; this I removed, and applied a dressing of borated gauze between the opposing surfaces.

I did this on Saturday, and upon her next visit, two days later, she informed me that she had been suffering with a terrific attack of her old trouble. The pain began soon after she left my office, but was fully relieved upon removal of the offending pressure. Since that time she has had no return of the symptom, has improved in general health, and is now able to do her own work. No other treatment having been taken, it is with confidence we attribute her improvement to the intranasal work. Allow me to add that the bony growth mentioned, springing from the sæptum and impinging against the inner surface of the middle turbinated high up, usually hidden from view by a hypertrophied anterior tip, is not so rare as I at first supposed.

Within the past five months I have removed no less than six besides the one described. In nearly every instance I have found them only by *deep, careful* probing, and that done a few weeks after I had removed an overgrown anterior portion of a middle turbinated.

Case II.—Mrs. C., aged thirty years, a lady of rather slender figure, but able to do a part of her housework; mother of two children, one living. General health fairly good. Complained of a severe, steady pressure on the top of the head, of the size of a half dollar, sore to touch, but no swelling. This was usually accompanied by pains streaking in an irregular course from the bridge of the nose and from the back of the head up to the vertex. The paroxysms came on from one to three times each week, many times making her unfit for work for several days. She thinks she was never entirely free from the pressure on the top of the head since it began.

Incidentally I would remark that I have always looked upon this particular symptom as indicating some trouble with the uterus or its appendages, consequently I gave it only a passing notice when taking her history. Whenever she took cold neuralgic attacks would set in, often prostrating her for a whole day. Besides the above-mentioned symptoms, there were frequent attacks of dyspnœa, forcing her often to leave church, waking her from a sound sleep at night, and sometimes causing her to stop in the street and catch something for support until the seizure passed away.

She had some dropping into her throat, but did not soil many handkerchiefs. Occasionally she had tinnitus, walked with her mouth open, but could breathe through her nose when quiet. These symptoms continued for the past five years, during which time she had been operated upon by Dr. V. for laceration of the cervix. This was followed by an improvement in her general condition, but her neuralgic troubles were not materially relieved. When she came under my care, January 17, 1893, I found comparatively free breath passages and regular nostrils, but each middle turbinated body had undergone a cystic enlargement of the bone in its anterior portion, until they were about the size of a marrowfat bean, crowding the outer walls and sæptum so closely in some places that I could not pass a No. 5 piano-wire loop around the one on the right side.

I finally succeeded in snaring the one on the left side, February 2d, and removing the other, piece by piece, with forceps, three weeks later. The last operation was followed by a complete cessation of the pressure on the top of the head, tenderness over the bridge of the nose, streaking pains to vertex, and the dyspnœa, though a deep-seated pain in the right eye would come on if she read or sewed even for a few minutes. A short rest would bring relief. At my suggestion, she consulted Dr. Marlow, who fitted her with glasses, so that now she tells me, June 12, 1893, that even that trouble is removed. Her general health is first class; all catarrhal symptoms are better, and she is able to breathe through the nostrils while walking.

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* Read before the Onondaga County Medical Society, at Syracuse, June 13, and before the Cayuga County Medical Society, at Auburn, N. Y., July 13, 1893.

Case III.—Mr. K., aged fifty-six years, timekeeper in one of the large industries of our town; referred to me by Dr. M. General health fairly good, though not robust. Had been bothered for several years with a stuffed-up nose; severe pain over right eye and temple, especially after a day of severe mental labor. Examining nose, I found nostrils pretty well filled with a yellowish boggy membrane, the upper third being one mass of thickened tissue; both middle turbinates enlarged in their bony and membranous structures. I began operations on him April 20, 1893, and finished October 1st, removing, during this period, the hypertrophied anterior tips of the middle turbinates, cauterizing the thickened tissues, where necessary, stimulating degenerated membranes, and in other ways restoring the nasal functions. The result is that he informed me by telephone this day, June 12th, that he had suffered no return of his hemicrania, though he is still engaged in the same kind of work, only more of it. He breathes freely through his nose, and the catarrhal manifestations are much improved.

Case IV differs from the preceding in that it was not referred to me especially for the cranial neuralgia, but came for ear treatment. Mrs. Y., aged forty-eight years, a lady from Johnstown, N. Y., who consulted me about a year ago for catarrh of the middle ear. Incidentally she remarked that there was a constant dull, heavy pain at the back of the head, just above her neck, which had bothered her for five years. Examination disclosed a long bony shelf extending across the left nostril. This I removed by the saw, as a necessary part of the treatment I was giving her for the ear affection, with the result that the peculiar pain was at once relieved, and she now writes me that it has never returned.

In looking over my records, I find notes of many other cases in which intranasal surgery has brought just such unexpected and satisfactory results, until now it has become my rule to advise all patients with cranial neuralgia, chronic ear, nose, or throat trouble, to have each contact and pressure within the nose removed. It may not *cure* every one, but that it does materially relieve a large proportion of cases goes without saying.

Note.—Since writing this I have collected five additional cases in which pressure on top of the head accompanied hemicrania, or was coincident with the neuralgic affections. Three of them have been relieved by intranasal work; two of them are now under treatment. I have also collected four more cases of well-marked hemicrania in which the correction of nasal disorders has brought happy results.

117 East Jefferson Street.

The New York State Lunacy Commission.—At a meeting of the Medical Society of the County of New York held on February 19th, to consider the resolution offered by Dr. Dana at the January meeting and referred to the Comitia Minora, after a careful consideration and discussion of the matter of friction between the State Lunacy Commission and certain of the State hospital superintendents, the following resolution was unanimously adopted:

Resolved, that the Comitia Minora does not deem it advisable to recommend to the society the indorsement of the bill pending in the Legislature abolishing the Lunacy Commission.

This action of the Comitia Minora was unanimously indorsed by the society at the stated meeting of March 26th.

THE
NEW YORK MEDICAL JOURNAL,
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Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, MARCH 31, 1894.

A BILL TO REDUCE THE ARMY MEDICAL DEPARTMENT.

Congress is once more engaged in reducing the army. This time the medical staff is to be the sufferer. The act of June 26, 1876, reduced the number of assistant surgeons from a hundred and fifty to a hundred and twenty-five. Now a further reduction to ninety is urged by the Military Committee of the House. This action is based upon the decrease in the number of stations which has occurred during the last decade. The committee say that if a staff of a hundred and ninety-two medical officers was sufficient to attend to the professional wants of two hundred and ten stations, then, certainly, a hundred and fifty-seven surgeons (the number proposed by the committee) should be quite ample for a hundred and twenty military garrisons. There is nothing like figures to prove a slight matter of this kind.

Just here the committee have fallen into a grave error. It should not be forgotten that when, in 1876, the number of medical officers was reduced to a hundred and ninety-two (the present number) there were, in addition, employed by the military establishment, a hundred contract surgeons. So late as 1886 there were still employed sixty-five contract surgeons, and the services of the last of these were not dispensed with until June, 1892. It would seem that, if the committee had given this subject thoughtful consideration, it would have appeared self-evident that a hundred and ninety-two surgeons could never, by any possible manner of means, supply the wants of two hundred and ten separate military posts. One might as well imagine that a hundred and ninety-two commanding officers could command two hundred and ten separate garrisons.

Granting that the stations have been reduced by gradual concentration of troops to a hundred and twenty, the committee have made no allowance whatever for the discharge of a hundred contract surgeons since 1876, who had been largely employed on detached service in the field, with scouting parties, and whose places must now be supplied by the regular members of the corps; and they have made no allowance for sick and disabled officers, for those entitled to leave after an extended Western tour, or for those who, under our military system, must be detailed for purely administrative duties. When these have been deducted, it will be seen that the number allowed by law is not in excess of the plain requirements of the service.

If this bill should pass, then two most important measures for the good of the medical corps and the army, both instituted by the new surgeon general, must promptly fall to the ground. We refer to the establishment of the new Army Medical School for the instruction of recently appointed assistant surgeons and to the privilege of a year's tour of duty in the larger medical centers extended to a few of the senior assistant surgeons solely for the purpose of professional improvement. For these reasons, and because we believe that the bill is in the line of a false economy, we hope to learn of its prompt rejection by Congress.

TWO KINDS OF MEMORY.

From careful observation and deliberate reflection upon the facts observed, the writer is convinced that there are at least two radically different forms of memory, neither of which is convertible by effort or education into the other; and that these forms of memory are seldom present in like degree in the same individual, one form in fact being often very feebly marked where the other is unusually prominent. In the early years of school life the child awakens to the fact that some members of his class have great facility for learning by rote; yet experience shows that these members are often distanced in the final examinations by competitors whose power of learning by rote is very slight; and still greater experience will often prove that these pupils of "rote" memory do not become the most useful or successful citizens. Every medical school, perhaps, boasts its professor whose "wonderful memory" enables him to roll out great strings of complicated therapeutical formulæ or to tell with a flourish on what side of a particular page and how far down its column a statement quoted is to be found. Yet this professor is very probably inferior in breadth of thought and in originality of practice to some colleague who occasionally in lecturing forgets even simple formulæ and confesses that names of authorities often slip his memory most unexpectedly.

It has been the fashion among educators, and with the public as well, to honor greatly the former sort of memory, giving prizes to the pupil who can learn by rote with the greatest facility. In fact, the histories and geographies of thirty years ago seemed to be specially constructed for showing off the merits of this form of memory. Even now the public feel a grudge toward the man who does not recognize the casual acquaintance of a week ago when he passes him on the street. As far as can be judged by one who possesses this former sort of memory in very feeble degree, it is dependent upon a process, somewhat akin to photography, by which the details of objects presented to either the physical or the mental eye are fixed in outline upon the sensorium. Recollection consists in turning the mental gaze upon the photograph thus recorded. It is said of a certain artist, famous as an illustrator of books, that after driving through a park he could at will picture to himself the grouping and individual outlines of the trees which he had passed. The writer knows a little boy who, when about five years of age, would draw from memory a picture of a railway locomotive with details of outline which would be doubted by his elders until investigation proved that they represented minor portions of the engine. Other instances of the development of this "photographic" memory *pari passu* with the earliest unfoldings of a child's perceptive powers will occur to the observant reader.

The second form of memory may be termed "logical." It appears less brilliant to the casual looker-on. It is apparently developed later; not because it is not, like the other, inborn in the structure of the mind, but because the reasoning faculty is developed more slowly than physical sight. Compared with "photographic" memory, it has *color*, which sometimes obscures detail of outline. The possessor of "logical" memory places little value upon naked facts or figures, but appropriates such as have important bearings, which can be perceived, upon other facts of known value. In moments of leisure his mind is engaged, not in roving at random over the impressions of the past, but rather in working out the relations between certain isolated things observed and deducing conclusions from these relations. These abstract processes of thought make him inattentive to many details in his present surroundings which would be impressed upon a "photographic" memory. As reflection is a higher faculty than observation, so the "logical" must be superior to the "photographic" memory. This becomes evident also if we compare the man of "logical" memory, who has well founded opinions of his own, with the man of "photographic" memory, who can give only the opinions of other persons, or the mature historian with the small-talk conversationist.

Both varieties of memory should be cultivated, for the best memory is that in which both are present in due proportion; but the average mind does not, in its original constitution, embrace both in equal degree. It is obviously unfair to punish the school-child who possesses a well-developed "logical" memory because he has not equal "photographic" perceptions; and it is unjust to brand the man of "logical" memory, who offers fine reasoning powers and stores of well-ordered facts of value, as one who has "a miserable memory," simply because he occasionally overlooks unimportant details.

PRECAUTIONS TO BE TAKEN AFTER DEATH OR RECOVERY FROM THE ACUTE INFECTIOUS DISEASES.

The *Union médicale* for January 27th contains an article on this subject in which the writer says that, if death follows an infectious disease, the body should be prepared for burial as soon as possible. It should be bathed in a 1-to-2,000 solution of corrosive sublimate and put into a coffin and packed with sawdust which has been thoroughly wet with the same solution. The interment should follow with as little delay as possible.

If the patient recovers, isolation should still continue, and he should not come in contact with others until a sufficient length of time has elapsed, according to the nature of the disease. The *Académie de médecine* has decided that isolation should begin from the day when the eruption first appears, and continue for forty days in small-pox, scarlet fever, and diphtheria, and twenty-nine days in chicken-pox, measles, and mumps, and should not end until after the patient has taken two or three baths, followed by thorough friction (including the head). These precautions may seem somewhat rigorous for ordinary practice, and they may be modified, at least in light cases, where, after convalescence, one bath lasting half an hour is sufficient. All clothing belonging to the patient should be thoroughly disinfected before being worn again.

Whether the patient dies or recovers, the same precautions are to be taken with regard to the clothing and the apartment. The linen, bedclothing, and towels should not be sent to the wash until after they have been passed through such a solution as was used during the course of the disease. All such articles as carpets, curtains, etc., should be sent to the steam disinfecting bath, and all other articles that can not bear the temperature of the steam bath must be disinfected with spraying or antiseptic lotions. In localities where there are no steam disinfecting baths, sulphurous acid must be used. As small a room as possible is to be employed in this method of disinfection, and six hours is a sufficient length of time for the process. All articles disinfected in this manner should be exposed to the air for several hours before being used again.

MINOR PARAGRAPHS.

PANCREATIC COLIC.

The *Gazette hebdomadaire de médecine et de chirurgie* for March 10th contains an abstract of an article by M. Mirmich, published in the *Berliner klinische Wochenschrift*, in which the author relates the case of a man, sixty-eights year old, who was subject to attacks of hepatic colic, followed each time by the expulsion of typical calculi of cholesterin. After a time the character of the colic had changed; the pain under the left ribs and in the epigastrium having spread to the shoulder-blade, there was no icteric coloration, the stools remained colored, and the urine contained no biliary pigment. A daily examination of the stools, made during the last attack, revealed concretions and small calculi of a peculiar character. They were malleable and easily crushed between the fingers, and presented a smooth surface on being cut. They contained no crystals or morphological substances; they dissolved in chloroform, and, after combustion, left a residuum containing acid carbonate and acid phosphate of calcium. According to the author, these characteristics suffice to distinguish the calculi in question as the second variety of pancreatic concretions. They might be taken for intestinal calculi, but the concomitant existence of colic confirms the diagnosis of their pancreatic origin.

TYPHOID FEVER IN PARIS.

At a recent meeting of the Paris Academy of Medicine, reported in the *Mercredi médical* for March 7th, the subject of the unusual prevalence of typhoid fever in the city was introduced by M. Bucquoy. Among the others who spoke on the question were M. Lancereaux, M. Lereboullet, M. Armand Gautier, and M. Vallin. It was agreed that the water supply had become dangerously contaminated, and a resolution was adopted unanimously advising the citizens to boil the water before using it for drinking or cooking purposes.

PARISIAN HONORS TO MEN OF SCIENCE.

According to the *Progrès médical*, certain streets in Paris, newly opened or renamed, are to be known by these names: Rue Quatrefages, rue Claude-Vellefaux, rue Charles-Robin, rue des Fontis, rue du Docteur-Blanche, rue Orfila, rue Dupont-de-l'Eure, rue Guyton de Morveau, rue Vulpian, rue Paul-Gervais, and rue Wurtz.

"ALLIGATORIN."

This, according to the *Apotheker-Zeitung*, quoted in the *Deutsche Medizinal-Zeitung*, is a mixture of the purified fat of the alligator and cotton-seed oil, recommended by a Cincinnati gentleman as a basis for ointments.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 27, 1894:

DISEASES.	Week ending Mar. 20.		Week ending Mar. 27.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	0	0
Typhoid fever	11	3	12	2
Scarlet fever	178	12	156	13
Cerebro-spinal meningitis	0	0	0	0
Measles	331	23	350	30
Diphtheria	200	41	227	48
Small-pox	28	8	18	4

Fractures of the Lower End of the Radius with Forward Displacement of the Carpal Fragment.—Dr. John B. Roberts, of Philadelphia, asks us to inform our readers that he is particularly anxious to know of any cases of fracture of the lower end of the radius with forward displacement of the carpal fragment. Notes of cases, references to published reports, or information of specimens in museums will be of much interest to him. Dr. Roberts's address is No. 1627 Walnut Street.

The Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons.—The course for 1894 will be delivered at the New York Academy of Medicine, No. 17 West Forty-third Street, on Wednesday evenings, April 4th, 11th, and 18th, at eight o'clock, by Professor Russell H. Chittenden, Ph. D., of Yale University, on the subject of Digestive Proteolysis.

The New York Post-graduate Medical School and Hospital.—The directors have sent out invitations to an informal reception to be held in the new building on the northeast corner of Second Avenue and Twentieth Street, on Thursday afternoon, April 5th.

The Chattanooga Medical College held its annual commencement exercises on Tuesday, the 13th inst. The graduating class numbered forty-nine.

The Edinburgh Obstetrical Society.—We learn that Dr. David D. Jennings, of New York, has been elected a fellow.

The late Dr. John H. Sinnett.—On March 24th the following preamble and resolutions were adopted by the medical staff of the Demilt Dispensary:

Whereas, We have learned with the deepest regret of the untimely death of Dr. John H. Sinnett, incurred in the discharge of duty,

Resolved, That the medical staff of the Demilt Dispensary desire to put on record their appreciation of the high standing of their late colleague, their feeling of loss sustained by the profession in this early death, and their heartfelt sympathy with his bereaved wife and family.

Resolved, That a copy of this resolution be forwarded to the *Medical Record*, the *New York Medical Journal*, and his family.

[Signed.]
Henry D. Chapin, M. D.,
John Dorning, M. D.,
Joseph E. Winters, M. D.,
Committee.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 18 to March 24, 1894:*

Hall, William R., Captain and Assistant Surgeon, is relieved from duty as attending surgeon and examiner of recruits at San Francisco, Cal., to take effect upon the completion of his examination for promotion, and will then report in person to the commanding officer, Whipple Barracks, Arizona Territory, for duty at that post.

So much of Par. 8, S. O. No. 60, March 12, 1894, from A. G. O. as relates to McVay, Harlan E., First Lieutenant and Assistant Surgeon, is amended to direct him, on being relieved from duty at San Carlos, Arizona, by First Lieutenant Straub, Assistant Surgeon, to report in person to the commanding officer, Fort Huachuca, instead of Whipple Barracks, Arizona Territory.

Cronkhite, Henry M., Major and Surgeon, is relieved from duty at Fort Clark, Texas, and ordered to report in person to the commanding officer, Fort Reno, Oklahoma Territory, for duty at that post, relieving Gorgas, William C., Captain and Assistant Surgeon. Captain Gorgas, on being thus relieved, will report to the commanding officer, Fort Barrancas, Florida, for duty at that post, relieving Woodson, Robert S., First Lieutenant and Assistant Surgeon.

Woodson, Robert S., First Lieutenant and Assistant Surgeon, on being relieved by Captain Gorgas, will report in person to the commanding officer, Fort McIntosh, Texas, for duty at that post, and for field duty in the Department of Texas, relieving Ten Eyck, Benjamin L., First Lieutenant and Assistant Surgeon. Lieutenant Ten Eyck, on being thus relieved, will report to the commanding officer, Fort Clark, Texas, for temporary duty at that post.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending March 24, 1894:*

Spratling, L. W., Surgeon. Ordered to the U. S. Steamer Alert.

Derr, E. J., Surgeon. Ordered to the U. S. Steamer Raleigh.

Shipp, E. M., Assistant Surgeon. Ordered to the U. S. Steamer Raleigh.

Braisted, W. C., Passed Assistant Surgeon. Ordered to hold himself in readiness for U. S. Steamer Columbia.

Harmon, G. E. H., Surgeon. Detached from the U. S. Steamer Yorktown and granted three months' leave.

Lumsden, G. P., Passed Assistant Surgeon. Ordered to the U. S. Steamer Yorktown.

Mackie, B. S., Surgeon. Ordered to the U. S. Receiving-ship Franklin.

Braisted, W. C., Passed Assistant Surgeon. Detached from the Naval Hospital, New York, and ordered to the U. S. Steamer Columbia.

Evans, S. G., Passed Assistant Surgeon. Detached from the Naval Hospital, Philadelphia, and ordered to the Naval Hospital, New York.

Farwell, W. G., Surgeon. Ordered to the U. S. Steamer Columbia.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Four Weeks ending March 17, 1894:*

Fessenden, C. S. D., Surgeon. Detailed as chairman of the board for physical examination of Assistant Surgeon L. E. Cofer. March 6, 1894.

Purviance, George, Surgeon. Detailed as chairman of the board to inspect Reedy Island Quarantine. February 20, 1894. To report at bureau for temporary duty. March 2, 1895.

Hutton, W. H. H., Surgeon. Detailed as chairman of the board for physical examination of the Inspector of Hulls. March 9, 1894.

Gassaway, J. M., Surgeon. Detailed as recorder of the board for physical examination of Assistant Surgeon L. E. Cofer. March 6, 1894.

Godfrey, John, Surgeon. Detailed as chairman of the board for physical examination of candidate, Revenue-Marine Service. March 6, 1894.

Irwin, Fairfax, Surgeon. To proceed to Paris, France, for special duty. February 24, 1894.

Mead, F. W., Surgeon. Detailed as chairman of the board for physical examination of candidates, Revenue-Marine Service. March 10, 1894.

Carter, H. R., Surgeon. To report at bureau for special duty. March 14, 1894.

Banks, C. E., Passed Assistant Surgeon. To proceed to Portsmouth, N. H., as inspector. March 12, 1894.

Kalloch, P. C., Passed Assistant Surgeon. Granted leave of absence for thirty days. March 12, 1894.

Glennan, A. H., Passed Assistant Surgeon. Detailed as member of a board to inspect Reedy Island Quarantine. February 20, 1894.

Wasdin, Eugene, Passed Assistant Surgeon. Granted leave of absence for sixteen days. March 3, 1894.

Kinyoun, J. J., Passed Assistant Surgeon. To report to the chairman of the Committee on Ventilation and Acoustics, House of Representatives, for special duty. February 21, 1894.

Woodward, R. M., Passed Assistant Surgeon. To report at bureau for special duty. March 14, 1894.

Guitéras, G. M., Passed Assistant Surgeon. Granted leave of absence for twenty days. February 19, 1894.

Stimpson, W. G., Assistant Surgeon. Granted leave of absence for twenty-five days. March 5, 1894. Detailed as recorder of a board for the physical examination of inspector of hulls March 9, 1894.

Houghton, E. R., Assistant Surgeon. Ordered to examination for promotion. March 3, 1894.

Rosenau, M. J., Assistant Surgeon. Ordered to examination for promotion. March 6, 1894.

Cofer, L. E., Assistant Surgeon. To report to board for physical examination. March 6, 1894. Placed on "waiting orders." March 15, 1894.

Gardner, C. H., Assistant Surgeon. Detailed as recorder of a board for the physical examination of candidates for the Revenue-Marine Service. March 10, 1894.

Stewart, W. J. S., Assistant Surgeon. Detailed as recorder of a board for the physical examination of candidates for the Revenue Marine Service. March 10, 1894.

Society Meetings for the Coming Week:

Monday, *April 2d:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society (private), New

York; Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; St. Albans, Vt., Medical Association (annual); Boston Society for Medical Observation; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society (annual).

Tuesday, *April 3d:* New York Neurological Society; New York Obstetrical Society (private); Buffalo, N. Y., Medical and Surgical Association (annual); Elmira, N. Y., Academy of Medicine; Ogdensburg, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Broome (quarterly) and Niagara (quarterly—Lockport), N. Y.; Hudson, N. J., County Medical Society (Jersey City); Essex, N. J., County Medical Society (annual—Newark); Union, N. J., County Medical Society (annual—Elizabeth); Androscoggin, Me., County Medical Association (Lewiston); Chittenden, Vt., County Medical Society; Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *April 4th:* Harlem Medical Association of the City of New York; Society of the Alumni of Bellevue Hospital, New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton); Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

Thursday, *April 5th:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Washington, Vt., County Medical Society; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

Friday, *April 6th:* Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *April 7th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society, New York (private); Miller's River, Mass., Medical Society.

Letters to the Editor.

THE AMERICAN SANITARY ASSOCIATION.

Groveland, Mass., *February 7, 1894.*

To the Editor of the New York Medical Journal:

Sir: Will you kindly permit me to make a statement concerning the American Sanitary Association, which is being organized as a national medical society? As secretary, I have received several letters from members and friends of the American Public Health Association, who have in some manner received the impression that our association aims to rival the American Public Health Association. This idea is erroneous. I am sure we all appreciate the useful and honorable career of that association. Briefly stated, the objects of our association are to discourage the manufacture and sale of impure and injurious foods and medicines, and to encourage the introduction of wholesome and honestly manufactured articles of food, medicines, clothing, and sanitary appliances in general. I sincerely hope that our efforts will meet with the approval of the medical profession and those interested in sanitary reforms, whether members of the American Public Health Association or not. There is ample field for more than one sanitary association in this country, and there is no reason why we should consider the ground already occupied. I should be very glad to answer any inquiries or furnish any information in my power to those interested. W. Thornton Parker, M. D.

Proceedings of Societies.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of February 28, 1894.

American Grippe, or Myxoid Œdema.—Dr. Carl Seiler read a paper in which he said:

In 1885 I observed the first case of this peculiar disease. I afterward (in 1887) discussed the subject with Dr. Glasgow, of St. Louis, who, strange to say, had made observations similar to my own; and as there was no disease which had been described which, to our knowledge, came anywhere near the one under discussion, he had called it "It," and so had I. The disease was first described by me in a paper published in April, 1889. Dr. Glasgow reported his observations to the American Laryngological Association in May, 1889, and in June of the same year I read my paper before the American Medical Association at its meeting at Newport. You may remember that at that time I referred to the fact that the disease was spreading all over the country, and that I had received letters from Montana, Washington, the Canadas, from the South, and, in short, from all directions, after having made inquiry about the new disease. Geographical situation, elevation, temperature, and atmospheric conditions apparently had nothing to do with its causation; in fact, the disease was everywhere the same in its specific characteristics.

In 1889, in the month of December, the disease broke out in New York city, where it assumed the proportions of a very alarming epidemic, and its existence was recognized as an epidemic general and fatal all over the United States within a very few weeks after its recognition in New York. Unfortunately it was called *la grippe*, or the Russian influenza, a disease differing entirely in its clinical character and prominent pathological lesions from the disease erroneously named by the public press. I then published a paper in March, 1890, in which I gave the diagnosis between the Russian influenza, or *la grippe*, as well as of other diseases mistaken for it, and the American disease. Last March (1893) I published the fourth edition of my book on *Diseases of the Throat*, in which I devoted an entire chapter to the consideration of this disease, under the name of "American grippe," or myxoid œdema, to distinguish it from the "Russian" or European influenza. The distinction is similar to that which we are accustomed to make between measles and German measles, or morbilli and rubella (Rötheln).

The peculiar symptoms of the American grippe are: The sudden onset; the rheumatic pains in all parts of the body accompanying the sudden onset; an abrupt rise in the temperature, with moist skin; a peculiar tension; no inflammation of mucous membranes. In some cases a deposit of pseudo-membrane occurs upon the tonsils and elsewhere, which, however, is of entirely different character from the pseudo-membrane of croup and of diphtheria. There is a peculiar puffiness of the mucous membranes, which shows itself wherever the deposit is most developed. It occurs in the throat, in the larynx and nose, in the bronchial tubes, and in the mucous membrane of the intestinal tract. In its prostration of the vital powers of the body the disease is something like typhoid fever; but with it there is no fever, no exacerbation of high temperature; there is no thirst, no dryness of the skin, and no brown coating of the tongue. In one case the temperature was 105° F. at the beginning, but it went down to normal in twenty-four hours. The pulse was 76 right along, and had none of the characters of a fever pulse. In those cases in which death occurred the temperature was reduced to normal, or even subnormal, and the giving out of the heart was the original cause of death.

In some cases the submucous infiltration is most evident in the vocal bands, and here the consequent closing up of the larynx causes suffocation. The immediate cause of death is usually a small hæmorrhage in the mucous membrane in such cases. Ecchymotic spots are often observed in the throat, bronchial tubes, and also in the stomach and intestines. Indeed, there may be black vomit, like the black vomit of yellow fever, and the stools may also show the presence of effused blood.

I am now speaking of the symptoms of American grippe. I need not refer to the symptoms of Russian grippe, since I could not add anything to the admirable review of them given by my friend Dr. J. C. Wilson, in his article on Epidemic Influenza, in Pepper's *System of Medicine*, which you are already familiar with.

In the matter of treatment I have found the greatest benefit from a long-discarded drug—which, I must admit, is of no use in any other disease—the benzoate of sodium. In American grippe it acts as a specific, precisely as quinine acts in malarial fever. It relieves the pain at once, it brings down the temperature, it relieves the oppression of breathing, and removes the false membrane from the throat. This remedy, with alcohol and rest, constitutes the whole treatment of the disease. In my experience I have found that it is an absolute specific—of course, provided that the diagnosis had been correct. As to other drugs, I would say that all those patent coal-tar remedies are only a cause of death. They act as heart depressors, when the heart is already profoundly depressed by the disease. Antipyrine, antifebrine, and all the other antis are worse than useless. The heart needs to be supported, and they all cause further depression. Quinine is often a cause of insanity and suicide. During the last three years I have made a careful investigation of all published cases, whenever possible, where insanity had been the cause of death in grippe, and I found that quinine in large doses had always been given to the patients. I have observed in my own cases that even very small doses of quinine will often cause mental disturbance.

Thus far I have considered only the acute condition. If benzoate of sodium is not given, and the patient does not remain in bed, a chronic condition of grippe will be produced. This is a very distressing condition, as I know from personal experience. The symptoms are so different that they can not be given in detail, and it is difficult to make a diagnosis. There is a flabby, pale, or coated tongue, want of appetite, impaired digestion, irregularity of bowels. With this there is a depression of spirits, want of ambition, and inability to perform any work requiring exertion of mind or body. A little overexertion will throw the patient back, and it will be days and days before he can regain his former position and begin to gain strength.

The pathology of the chronic cases has been shown to be a slow process of fatty degeneration of all the organs of the body except the kidneys. And, if there has not been pre-existing disease of the kidneys, there will be no albumin in the urine.

The chief symptoms of the chronic form are general neurasthenia, associated with chronic distention of the venules, and anæmia of the arterioles throughout the body. This was seen by ophthalmoscopic examination in the eyes, where it produced impaired vision or blindness. Blueness of the skin is due to the same venous congestion, evidently of neurotic origin. Besides the mental depression, there are hallucinations of peculiar character and irritability of temper. Light has a depressing effect, while darkness causes exaltation. Toward evening the patient usually feels much better than in the early part of the day. I have observed that a patient may go to sleep at ten o'clock and wake up at eleven in a state of mental exaltation. He feels like getting out of bed and walking about his room, or relieves his mind by writing poetry; this is the only thing that will enable him to go to sleep again. I have some very curious specimens of this "grippe poetry" in my possession. The irritability of temper I have referred to is beyond the control of the patient, although he is fully aware of it; this is part of a hysterical condition, and, under slight exertion or emotion, a condition of hysterical aphonia may be developed, even in men. Then, again, the patient is very much disturbed by all kinds of rhythmical noises, especially at the seashore, where the "one, two, three" of the breakers nearly drives him out of his senses. Even if he can not hear them, he is conscious of annoyance from the rhythmical repetition of the waves, and this will make him extremely nervous, so that he can not sleep. The rapid succession of the trolley-car bells is also very annoying, and I have had patients who were driven out of the city by these noises.

The treatment of the chronic grippe is by alterative tonics. Buchu may be given as a mild diuretic. If there is sleeplessness, bromides are useful. All the coal-tar preparations are bad. Of the narcotics, the best is hyoscine in small doses; as a tonic, strychnine in considerable doses, beginning with gr. $\frac{1}{32}$ up to gr. $\frac{1}{16}$, three or four times a day. A change of climate is advisable, and the best I have found is a moderately high place, where there is plenty of oxygen with absence of noise. This is necessary to obtain rest for the mind and body. Mineral waters are valuable, and I found at Bedford great advantage from the use of the water, but there is a spring at Swiftwater, near Pocono, which I consider even better.

The wine of coca is especially useful, when the patient begins to exercise, as a "pick-me-up." I came across, the other day, a sample, of wine of coca made by the Columbia Chemical Company, of Washington city, which I found very much better than any I had previously met with, as it gave much satisfaction in the cases for which I ordered it. Where the patient must keep at his work the coca is a valuable remedy, as in the case of a preacher who has not sufficient strength to go through with his sermon without some such aid.

A Brief Study of Some Ancient Epidemics and their Relation to Influenza, with Notes on the Epidemic of 1893-'94, and Recent Methods of Treatment, was the title of a paper, prepared by Dr. Roland G. Curtin and Dr. Edward W. Watson, as follows:

The question of the identity of the cases of excessive sweating seen frequently in the last four years with influenza is scarcely open to dispute; since, in the cases observed, either the initial symptoms were those of influenza or the sweating was evidently a sequel to a well-marked influenzal attack. All influenza, as a rule, was marked by relaxation of the skin, after the initial period and the subsidence of the earlier symptoms, and this often continued in a mild form (sweating on slight exertion, sweating when in bed, and on slight exposure to cold) for days and weeks. But the cases directly under consideration were marked by such excessive relaxation, and so entirely different from any previously observed in any other disease (except, possibly, in rare cases of convalescence from malarial and rheumatic disease, from which latter they differed in the odor of the perspiration), that they could not but strike the observer as unique.

We might add that since the epidemic sweating in phthisis has been much aggravated, as well as in other diseases. This may be explained as a condition like the other general catarrhal conditions, a hydrorrhœa, or what might be termed, for the want of a better name, a cutaneous catarrh of the sudoriferous glands.

In the early epidemic of 1889–'90 a number of cases were observed in which there was this tendency to a remarkable degree, continuing for weeks, without emaciation or exhaustion or induced anæmia. These cases often perspired to such a degree that in cold rooms they seemed enveloped in steam, and at times, as they were observed in bed, the ear which was uppermost and the corresponding hollow of the cheek were often full of water. At times the sweat extended into the mattress, and from below upward the moisture would outline the form of the patient on the coverlid.

In one case this condition lasted one week; in another, four weeks; in another, three months; in others, five months; and in two, six months; and one case, affected a year ago, even now on slight exposure to cold continues to sweat profusely.

Many practitioners alluded in conversation, or in periodical medical literature, to similar cases, one writer in the South reporting an epidemic in his locality of what he termed a "sweating fever," and in the communication referred to asked information as to its nature. From the description given it was evidently something more than ordinary epidemic influenza, or simple catarrhal fever as usually observed, but resembled closely some of the cases seen by the writers in the past four years. Our cases generally began with an attack of influenza or had some of the complications and sequelæ of influenza—viz., the pulmonary or cardiac symptoms (angina pectoris, pericarditis, and heart failure), or affections of the peripheral nerves of one or both arms, rheumatoid pains, meningitis, diarrhœa and other catarrhal affections, and insomnia. With this profuse sweating the temperature night and day was generally near the normal —often either merely a little above or below. In one case for two months perspiration continued with the temperature from a half to one degree below normal. Another case was noticed similar to the above.

It is easy to understand from what we have seen of influenza, that in different periods of an epidemic different structures may be predominantly affected—viz., an epidemic of influenza in which cardiac symptoms predominate might, under depletion and the unwise use of depressants, come to resemble the so-called "cardiac disease" of ancient times; or, where the vaso-motor nerves especially suffered, under like improper management—overheating, excessive covering, and the abuse of diaphoretics—a genuine "sweating sickness" might be produced; or the extreme sweating producing copious miliary eruption, we might with justice call it the "miliary fever." In fact, the recent epidemic has by turns exhibited the characteristics of the various disorders described and preserved to us in the writings of several ancient observers, and it may prove of some value to contrast these characteristics with those extant observations.

The following shows what symptoms and conditions were common to all the above-mentioned diseases: Epidemic; sudden in onset; beginning with chilliness or rigor; accompanied by more or less intense headache and fever; the strong were attacked rather than the weak; the comfortable classes rather than the extreme poor; all were attended by sweat of unpleasant or fœtid odor; occasional varied hæmorrhages in all; vomiting or purging at times in all; meningeal and other nervous symptoms; nervous prostration and prickling pains; sudden paralysis, heart excitation, heart failure; rheumatic pains—gouty symptoms; all were infectious or contagious; all had catarrhal symptoms and sudamina or other eruptions of a miliary character; in all the atmospheric conditions favoring spread of the disorder were fogs and humid atmosphere; stimulants were in all beneficial; all had heart complications; sudden excessive secretion of urine and sweating came together; all were alike sensitive to cold and draughts; checked perspiration caused diarrhœa; relapses were frequent.

The mortality was light in acute influenza, heavy in all others (this can be somewhat accounted for by modern therapeutics and hygiene), and much in this respect depends upon the peculiarity of the epidemic.

The sequelæ in all were very similar; the general constitution was shaken—dropsy, consumption, heart failure, low forms of fever followed, and insanity and suicide were frequent.

A brief study of these data will show how very analogous, to say the least, were all these diseases. Certain marked peculiarities not found in other diseases generally were common to all. The most marked is sweating, so that from the descriptions which have come down to us one could see little reason why the name of "sweating sickness" might not have been applied to any of them (at least in some of their extreme and varied manifestations). The group of nervous symptoms common to all is very striking and peculiar. These diseases seem to have been all recognized as contagious or infectious, and occurred as epidemics, and often seemed to supplant (follow or succeed) one another rapidly. The rheumatoid and gouty symptoms, the heart complications, while in some more prominent, existed in all. The description of the cardiac disease might be applied, line for line, to some of the severer cardiac influenzal cases recently met with, and at times associated with these was sweating, as profuse and overwhelming as that described in the "sweating sickness" of antiquity—lacking only its extreme malignancy.

The sequelæ seem to closely resemble each other in all, and the atmospheric conditions—fogs and rain, and a warm, moist, wet state of weather—seem to have in all been exciting causes.

We are almost forced to the conclusion that if not identically the same, these diseases belong to the same group or family, and are intimately correlated. They seem to have preceded, replaced, or followed each other in close succession through quite an extended period, or prevailed in different countries almost simultaneously, at times seeming to be conveyed by contagion or infection. Of their real origin we have no more accurate knowledge to-day than our forefathers had, but it seems a reasonable and probable deduction that there exists almost constantly in the world a form of influenza (generally transient and mild) known to us as the cold we "catch" under various atmospheric causes, which under vicious atmospheric conditions and climatic variations is capable of developing in one or another direction—and so into the various forms which we have been considering. If not all the same in origin, when once their microbic cause is really isolated and identified beyond a doubt, it will in all probability be found to be but varying forms and outgrowths of the same germ, or that varying germs exist (as in other cases is already recognized) of similar influence, causing those different diseases which may be considered as but malignant varieties of that influenza with which the world is at present so unpleasantly familiar.

The Epidemic of Influenza observed in Philadelphia during the Present Year (1893–'94).—During the years of influenzal epidemic disease since its appearance in 1889, its variations in intensity may be summed up roughly as follows:

1889–'90, very severe and fatal.
1890–'91, mild.
1891–'92, marked severity.
1892–'93, mild.

1893–'94, very marked, but not so widespread and fatal as in 1889–'90.

From this it will be seen that every other year it has been severe. The two winters when it assumed a milder form were of the five the most severe in temperature—1890–'91 having an early cold December which seemed to throw its epidemic outbreak toward the spring, 1892–'93 being continuously cold—the epidemic outbreak seeming to be worse when favored by a mild fall and early winter and great and frequent changes. This past winter the outbreak began somewhat early, about the middle of December, the usual number of isolated cases having occurred through the autumn. A certain amount of the year's outbreak seemed due to visitors returning from Chicago, where it prevailed in a mild form.

The pulmonary attacks seemed milder, though grippe lung was not infrequent. The expectoration was more inclined to be purulent. Even among the aged the fatality was light; one of the authors encountered seventeen cases with but one death, and that in a case complicated with pleurisy and effusion and catarrhal nephritis. Of the sixteen recoveries, some of the ages were eighty-six, eighty-two, seventy-eight, seventy-four, sixty-eight, and sixty-four years. The constitutional symptoms did not end by crisis, but continued some time after the local symptoms had subsided.

Diseases other than influenza have shown less of the influenzal stamp than in previous winters, but the traces of the epidemic were still visible when looked for. Considerable vertigo, alternate creeps and sweats, rheumatic pains in the limbs, insomnia, and occipital headache accompanied disorders where such symptoms are not ordinarily met. Temperature ranged lower, on the whole, than in past years. In bowel catarrhs much colitis (with gelatinous froth, with or without blood) was frequent.

The vertigo was sometimes transient, but often very persistent; change of posture induced it—throwing back the head, looking to right or left—sometimes such movements of the head even produced insensibility. This vertigo was often persistent; in one case for a year, being worse on exposure to cold, and finally disappeared with an attack of pulmonary catarrh.

Many cases of stiffness and pain in the back of the neck occurred during this winter's epidemic, some with considerable fever. Constipation occurred in almost all prolonged cases of influenza, was obstinate, and marked peculiarly by a tendency to "throbbing in the bowels." This constipation was not due to hardened fæces or scanty mucous secretion, but rather to an imperfect power in the muscles of the bowels, the expulsive mechanism, or both.

During the mild weather of the winter catarrhal diarrhœas were more common, associated often with vomiting, which was an unusually frequent symptom during the entire season; while during the cold spells pneumonia was most frequent.

In the treatment of influenza some changes have occurred. Some progress must be made in the management of a disease so long and constantly present with us. Not only do our necessities lead us to employ new measures, but diseases themselves change, and influenza is not an exception to this rule. If any general and marked change in the behavior of the disease has occurred it has been in the manifestation of a greater susceptibility on its part to the action of old remedies and time-honored measures. In fact, there has been a revival of a number of old-time remedies which have been for a score of years discarded as useless, and which now in our epidemic experience lead us to conjecture that our predecessors were not such fools as we supposed.

New remedies, too, which were unknown to the world in its older epidemics of influenza have been used with advantage, but in general the tendency has been to treat influenza and its sequelæ on the old lines of treatment, and with far more success than in the years since 1889, and we think that this tendency has gradually increased since that year.

For acute influenza, the salicylates and salicin still hold their popularity, which only increases with time and use, especially since we have in the market the pure salicylates of Merck and others, which certainly do not depress the system as did the crude article formerly used; phenacetine combined with these still holds its popularity in early stages, while for the cough in the bronchial form codeine is more and more used in small doses.

For the marked initial chill, spirit. æth. nit. with spirit. æth. comp. and chloric ether afford a valuable aid, and when these fail to arrest the often convulsive movements and restore the overwhelmed centers, amyl nitrite and nitroglycerin have often proved successful. Opium in the form of onset accompanied by severe pain has given far better results than in former years, with apparently no bad effects. Terebene, turpentine, oil of sandal, and oil of cubebs, as expectorants, and ammonium chloride in the later stages have been relied on; but for the persistent tickling, pharyngeal, laryngeal, and tracheal cough all remedies administered have often failed, but immediate success has been met with by employing a spray of liquid albolene and menthol, five grains to the ounce or more.

Where the grippe lung with its pseudo-pneumonic physical signs made its appearance, counter-irritation by mustard has seemed best. The pleurisies, by the way, which have been encountered this winter were almost invariably plastic and subsided readily on counter-irritation and salicylates.

The purely gastric influenza was treated by cocaine, gr. $\frac{1}{12}$ in ʒ ij of aqua chloroformi, as frequently as every hour, while the diarrhœal form was managed readily in most cases by bismuth and opium, cocaine being added where vomiting continued, and in the obstinate cases, and in fact in all the cases which seemed severe at the onset; the bowels were daily flushed out with a one-per-cent. solution of creolin or boric acid. The effect of this was often marvelous, especially in cases attended by high fever, where the subsidence of temperature was almost immediate.

For the resulting prostration and loss of appetite, full doses, two drachms, of bitter tinctures, with full doses of strychnine were given; sometimes caffeine was added. Alcohol, cod-liver oil, hypophosphites, iron, and malt still hold their own, and seem the best known agents for the repair of wrecked and ruined constitutions. Opium has been found to be the most useful drug for the meningeal irritation, or mild or threatened meningitis. As to the treatment of the profuse and protracted sweating, we might as well say that after trying all recommended remedies, all equally failed of satisfactory results. Fair trial has been made of the following remedies: Atropine and belladonna, quinine and sulphuric and camphoric acids, agaracine, picrotoxine, and ergot; small doses of jaborandi seemed to do a little good; also alcohol in moderate quantities; also sage tea and boneset. Externally, alcohol and alum were of some use; internally alum failed. The power of the vaso-motor nerves seemed often so impaired that remedies had little or no effect.

Some Observations on Influenzal Neuritis.—Dr. Edward W. Watson read the following paper:

The field of influenza is almost inexhaustible. Some portions of it have received far more attention than others. If any part can be said to have been neglected it seems to be that of neuritis, in which we have often the most notable failures, and in which also there possibly lies concealed the secret of its pathology and the clew to its mystery.

The different nerve affections of this disease might, if we chose, be divided into three main divisions—general nerve irritation, local functional disturbances, and local neuritis. We might consider the general aching and pain which marks the onset as the first. Functional neuroses may be met with at any period of an attack, but localized neuritides are rather sequelæ than early symptoms.

Now, the main question at issue is, whether in a localized neuritis the peculiar process gains special access to the separate nerves, or even to the nervous system generally; or whether in all influenza, as shown by its initial symptoms, the nervous system is always the seat of such process, though in so benign a degree as to escape notice; or, as a third view, whether while the nervous system is always invaded the nerves of organic life are not generally the principal sufferers, and those of voluntary motion are least and so escape notice.

We should premise that influenza, even in its acute epidemic form, is in all probability a much longer disease than is generally supposed. Early recoveries from pulmonary and abdominal forms are such only in seeming, as shown by the lingering character of the recovery, and the long period during which tonics and stimulants often fail to overcome the exhaustion and inertia. Further, in general, when recovery from acute disease sets in, the whole world brightens to the convalescent, sleep restores, food nourishes, and tonics tone; but after acute influenza there is a long period of semi-recovery—a lethargy of the system in which remedies fail to act.

Now, if in such a case of supposed convalescence exertion, exposure, anxiety are endured, we have, if early in the case, a so-called relapse, or more properly a recurrence in some new organ or structure, generally internal; but if later in the convalescence, we are more likely to have an external peripheral neuritis. A central neuritis may at times occur, as in the unfortunately frequent heart failures; but more commonly if walking has been excessive we find a sciatica, or an extension of the disease in the line of the sciatic to the calf, heel, or toe. When the arms have been overstrained in gymnastics, reaching, lifting, driving, we find a brachial neuritis—generally descending from the shoulder. These attacks should be discriminated from those muscular pains which appear much earlier in muscles in the neighborhood of organs affected by influenzal catarrhs, as the trifacial in coryza, the region of the neck in catarrhal pharyngitis, lumbar pains in renal catarrh, epigastric pain after gastritis, etc.

Of the external neuritides the brachial is the most common. This occurred in nearly half of our cases; then in order of frequency came the intercostal, sciatic, lumbar, epigastric, cervical, lower abdominal. The onset of the brachial attack is generally sudden, and often at the first the disease seems reluctant to locate, the pains radiating in the neck and thorax, axilla, and down the arm; soon, however, the painful point will be found quite fixed on the anterior aspect of the head of the humerus (shoulder). Associated with the pain come numbness and tingling in the course of the nerve, and the shifting character of the numbness, etc., from radial to ulnar distribution, or *vice versa*, shows how intermittent is the obstruction and interference with the nerve current (action). These shifting sensations are by no means to be taken as indicating that the active process has extended to the fingers, but that where located it obstructs or interferes with certain nerve fibers distributed to the fingers.

The actual discernible alteration in the course of the nerve is found most frequently in the region of the biceps, though painful points can at times be made out at and below the elbow. The biceps, however, most frequently in protracted cases hardens with a doughy hardness and enlarges. In unfavorable cases it afterward wastes very considerably. Similar wasting has been observed in other regions where other nerves are in like manner affected. We are inclined to believe that if proper care be early taken the condition tends to somewhat rapid recovery, but when the arm is used to any extent, and where with this there exists a gouty history or a gouty inheritance, under undue effort, and imperfect nerve supply, the muscles go into a state of tonic spasm or contraction and the nerve exhausted in its efforts to transmit the force demanded becomes locally still more involved; rarely an eruption of shingles occurs in the course of the affected nerves.

We may as well admit that this condition is somewhat beyond direct and positive therapeutic aid; how serious the condition of the nerve may at times become has been of late shown by careful post-mortem examination. How very hopeless the restoration of function may be, is shown in the series of cases reported by Dr. Ferguson, of Toronto, in the *Medical News* of January 6th of this year (1894), for although no mention is made by him of the fact that his cases were any of them of influenzal origin, though he mentions in one case that influenza had preceded, we think that at least three of the five bear evident marks of being due to that cause. Again, a study of the behavior of these diseased nerves under certain circumstances tends to throw a partial light into the general gloom. Again and again after applying the interrupted current the pain has been rapidly relieved, but within a few hours a more violent attack has occurred in a more important (and serious) locality—from the arm to the lumbar spine, to the cervical region, to the præcordial region, to the other arm; sometimes exhaustion and faintness; sometimes intermittent pulse has been noticed. The same experience has been encountered in the employment of massage of the affected arm, while in other cases in later stages, or in the same case later in its course, both agents have been of the greatest service and conduced to permanent recovery. In three cases long localized pain in the epigastric and abdominal regions has yielded at once and permanently to one short application of the battery.

It would be well also to notice those cases of intra-thoracic and intra-abdominal neuritis attended with much more threatening symptoms, where change of position leads to failure of pulse and loss of consciousness, or to profound nausea, or to respiratory failure, which as they gradually recover seem to do so by an exodus of the morbid condition from within to without; where an emerging neuritis of arm or leg seems the surest harbinger of escape from a fatal illness. The influenzal process seeming to traverse deep-seated and vitally important centers and nerve trunks and emerge to those of less vital moment. This has been a somewhat common termination of many cases of apparent neurasthenia, which should, however, be discriminated from the neurasthenia with which we have of late years—before the influenza epidemic—become so unfortunately familiar, for between them there lies a great difference. In either case the patient is neurasthenic, but has arrived at that condition by quite a different road. The typical neurasthenic has exhausted centers, and we believe may have injured nerve trunks even, by excessive and prolonged exertion or sudden overstrain. The influenzal neurasthenic has the nerve centers, perhaps the communicating nerve trunks, certainly occupied and rendered useless for a longer or a shorter time by a progressing disease. In the former case it is but necessary to accumulate force and cause its conveyance to mechanism which we put in the best possible order; while in the latter case we must await the disappearance of the disease before we can hope for improvement; this we think supplies the reason for the behavior of the patient under massage and electricity.

In summing up therapeutic results, we can say that rest is an absolute necessity; that electricity has benefited many cases, generally ones of long standing, but has injured, at least for a time, many early cases; and that massage, though less powerful for good, has been only less powerful for evil; while counter-irritation has been disappointing, and repeated blistering has repeatedly failed.

In the early days of the attack heat has been often valuable, where the whole limb could be enveloped in moist heat as by fomentation, or swathed in hot flannels, or placed in hot water. But no drug has given reliable results. When improvement has been most pronounced, then relapse and disappointment have been most certain. If to this sweeping statement there be any exception, it is in favor of arsenic in very small doses frequently repeated. Of general systemic treatment, such as with strychnine and phosphorus, quinine and alcohol, and cod-liver oil, we are not speaking—these may generally benefit the patient, appetite may increase with assimilation, strength and the general appearance of health may return, but the arm or leg be much the same. Mercuric bichloride, iodides, and bromides have given no results; salicylates and salicin have failed to relieve—they may have prevented. Morphine pushed continuously has seemed to shorten the attack in many cases if given early, possibly by enforcing that rest which is so vitally important to cure; atropine, which controls some of the manifestations of nerve disorder—as the chilliness, excessive sweating, and the pulmonary conditions—is a failure in the neuritis under consideration. Hypodermics of atropine in the painful points or into the affected muscles (biceps itself) have given no good results. Locally, belladonna, menthol, ichthyol, and mercurial ointment have been used with apparent benefit. But viewed in the most cheerful light treatment is unsatisfactory, and prevention is better than cure. Prevention—if the ideas expressed in this paper are correct—by early and continuous rest continued long enough to allow the system to react and the disease to naturally terminate; and when exercise is permitted, with such restriction as to avoid tire, general or local, and this will require such confidence on the part of the patient, and such an education on his or her part also, that it will, I fear, be long before the disease is banished by preventive measures.

The treatment of an internal neuritis of a nerve supplying a vital organ resolves itself into a treatment, so far as possible, of the organ involved. To take one case as an illustration—the stomach. All are familiar with the fact that digestive difficulties have been unusually frequent of late; they have taken the form of delayed digestion, with emesis, pyrosis, and eructations. In the majority of these we have found the difficulty to culminate at night, to be least in the early morning. All of them, if carefully questioned, will give a history of influenza as a starting-point, generally influenza of the gastric form, though perhaps not recognized as such by the patient; they go back to an attack of chilliness and fever with vomiting, fever with loss of appetite, fever with diarrhœa. Following these there will often be a history of gastric pains excited by food; often a distinct account of a peculiar pain or mild gastric pang coming on at short intervals after eating, and peculiar in that it starts in the region of the pylorus and travels in a wave or thrill in the direction of the greater curvature from right to left, dying out gradually as it travels, only to be followed by a succession of such pains. As these pains diminish with days and weeks the patient discovers that he has dyspepsia, and, if appetite returns, he begins soon to suffer after meals in a different way with acute indigestion. After a time the gastric soreness is almost continuous, and nights and days are passed in great distress, and speedily weakness and emaciation occur. Now, these cases seem to be due, judging by analogy, to a condition of the pneumogastrics or splanchnics similar to what we have been noticing in external nerves—a long-continued state of diminished action of the gastric muscles, owing to their supplying nerves having been occluded or interfered with by influenzal disease.

Those who have attempted to relieve these cases (which show no evidences of dilatation and rarely of any gastric catarrh) will bear witness to the general uselessness of the old lines of treatment and the new ones as well. They resemble cases of dilated stomach with pyloric obstruction, but are most probably atonic stomachs with normal pylori, in which the force of contraction is insufficient to expel the digested food, or where the almost unknown nervous mechanism of the pylorus is in some way at fault.

When this condition has become aggravated and distress is constant, washing out the stomach will undoubtedly give relief, but acids, alkalies and bitters, pepsin and peptonized foods avail little. From careful observation of the general condition, the observer must be led to conclude that a defective innervation and consequent painful and feeble action of the stomach is the real difficulty, and that the retention of food too long leads to the formation of digestive products toxic to the economy and irritant to the organ itself. Intense irritability is often shown by emesis where the matter ejected seems quite normal; faulty innervation by the cases when digestion can go on normally for days in the recumbent position, but where the patient, on assuming the upright or sitting posture, invariably vomits after a definite period of time—half an hour or an hour. That increased irritability is one cause of the delay and distress is shown by the character of the only drugs which seem to afford relief. Chloroform, cocaine, bismuth, alcohol, and the bromides—these, especially the latter, will in many cases restore appetite, relieve distress, and banish indigestion; but when they fail we seem left with but one alternative other than washing out the stomach—viz., to give the organ as long and continuous a rest in the twenty-four hours as is possible, in order that it may store up power enough and free itself. This gives immediate relief and so is willingly pursued by the patient.

As a formulated plan of treatment, it is best to begin with twenty-four hours of semi-starvation, interdicting all food except a gill of hot milk three times in the first day; on the next day ordinary diet can be given in full amount at the morning and noon meals, but after 2 P. M. nothing until the next morning at breakfast. In a few days the appetite will accommodate itself to the circumstances. The stomach, relieved and free from pain, does its work in better time and manner, and emaciation ceases and weight is rapidly regained. The weight of the patient should be carefully taken at intervals of three days, and when there is no more increase, where further increase of weight is desirable, then more food must be given; and first a return to some form of evening meal should be tried. Milk or a farinaceous food with milk is best borne, and if all is well the patient can return to his former habits in regard to eating and is cured. If, however, as is often the case, this can not be done, the extra food may be given in the forenoon—*i. e.*, breakfast at 7 A. M. or earlier; lunch at 11 A. M.; dinner at 2 P. M.; in this way as much food can be taken as ever, but without distress.

When from the beginning the distress has been absent at night and severe during the day—as, for instance, where the most serious suffering is experienced after breakfast—breakfast itself must be omitted or reduced to a cup of milk, while dinner and supper are taken as usual, the necessity being for some period of rest continuously in the twenty-four hours of from fourteen to sixteen hours. The lighter cases, where the midday meal alone is followed by indigestion, can generally be reached by bromides and a bitter, or by omitting the mid-day meal altogether, even adding additional food at bedtime if the scales show no gain.

How successful this plan of treatment is, how much relief it affords, and how notably the patients gain in weight and spirits, will be realized by any one who will try it. Crude enforced starvation has always been one of the main remedies of empirics and charlatans in dealing with indigestion, but in the method we have described we believe it to be scientific and valuable.

Cases illustrating the success of this plan, which for want of a better name we might term "digestive rest," could be given in considerable numbers were it desirable to add to the length of this paper; let it be sufficient to say that in genuine post-influenzal dyspepsia the writer has met with very few failures save where undoubtedly the directions were not followed. Where the case is severe and the patient can be induced to give the plan a three-days' trial, his own relief will be a sufficient inducement to pursue it as long as is necessary.

Rest, then, of all remedies seems most fitted for the relief of influenza from its onset to its remotest sequel. There seems always to be a deficiency somewhere or other in the power of sustaining voluntary and involuntary exertion, and a tendency to aggravation or relapse on exhaustion. Did time permit, a study might be made from this point of view of other post-influenzal conditions, showing, for instance, how the peculiar catarrh of the liver is best treated by relieving the liver of work in the shape of foods it can not manage and of cholagogues it can not endure; how the influenzal affection of the ocular muscles, which baffles the best-meant efforts of relief with lenses, yields speedily to darkness and disuse of vision; and lastly, how the mania and delusions of influenza are combated most hopefully by those remedies and means which, like opium, enforce sleep continuously for considerable periods of time.

Dr. JUDSON DALAND said: Dr. Curtin's remarks with reference to the sweating sickness were of special interest to me, and one readily understands why the name was applied to this disease in olden times. His descriptions of epidemics that occurred long ago were well made.

Dr. Curtin's wide knowledge and extensive experience make anything that he says in regard to the therapy of this affection of great importance. With regard to the "grippe lung" to which he refers, this affection has for a number of years attracted my attention, particularly from a diagnostic point of view. The physical signs in these cases often vary from day to day with extraordinary rapidity—in fact, with such rapidity as to make one doubtful of the correctness of the first diagnosis. The pathological examinations show a mixed condition of bronchitis, catarrhal pneumonia, and collapse. These lesions occurring in different parts of both lungs, and varying with such extraordinary rapidity, suggest a distinctive nervous origin, and there is probably an interference with the nerve supply of the lung.

I did not hear Dr. Curtin mention the use of strychnine and alcohol in the treatment of the general disease. The benefit derived from the use of these agents during the height of the disease is very great, and they are practically the chief remedies to be relied on. The use of the salicylate of sodium and phenacetine has given me the results which he has mentioned.

Regarding the suggestion of Dr. Seiler that this affection be called American grippe, I should say that although I have not studied European grippe, the descriptions which I have read, and the numerous conversations that I have had with Continental physicians, have failed to convince me of any essential difference in the disease as we see it here. I therefore think it unwise to add another to the various synonyms for influenza, which name is the one to be preferred.

Dr. Seiler also states that the chief cause of death is hæmorrhage from the mucous membrane. In my experience the chief cause of death has been the pulmonary complication. With regard to the use of benzoate of sodium, I do not think that the favorable result described could be expected in many cases as seen in general practice.

With regard to the effect of quinine in the production of insanity and other mental disturbance in influenza, although I have seen many cases of influenza, most of which have received quinine, I have yet to see a case in which the causal relation between the mental condition and the use of quinine could be established.

Dr. J. SOLIS-COHEN said: I came here to listen, and have not prepared myself to take part in the discussion. I remember the initial papers of Dr. Glasgow and of Dr. Seiler very well, but while Dr. Glasgow named the disease "it," he distinctly stated that in his reading he could not find anything that resembled it except the old records of influenza. This was a very acute observation, made, as it was, three or four years before the epidemic became pronounced. My own earlier cases were treated exactly as Dr. Glasgow had recommended—that is, with benzoate of sodium—and I do not now know of any treatment that acts better than putting the patient at rest, giving benzoate of sodium in ten-grain doses every hour or few hours until the kidneys are acting freely, and then continuing it less frequently. Strychnine, acting as it does on the terminal nerve fibers, is of great service, for the disease exerts its baneful influence markedly on the terminal nerve fibers of the structures concerned in the nutritory and circulatory systems.

The class of cases that I have seen suggests that this disease is largely a disease of the lymph and circulatory systems. We know that the nasal lymphatics are in close connection with the subdural space, and in many of the cases where the nasal symptoms are severe, we have severe meningitis and those conditions which render the patient despondent, as a direct sequence by continuity of structure. The profound impression on the nutrition shows also that the lymph system is very much affected.

In the history of previous epidemics of this disease marked reference has been made to different varieties, such as the pulmonary, gastro-intestinal, and other forms of influenza, and I have asked a number of my friends in general practice whether they had observed in recent epidemics as many miscarriages as had been described in previous epidemics. I found that, with the exception of the epidemic of 1889-'90, there had not been so many noted.

Another reason for regarding this as largely a disease of the lymphatic system is the occurrence of the affection of the throat described by Dr. Seiler: that peculiar puffy condition which looks apparently like œdema of the larynx and œdema of the palate. When you incise these parts, however, you do not get a serous fluid. Sometimes you have blood and sometimes a mucoid material or lymph, which may exude in long, continuous strands.

Now, as regards the use of quinine in influenza, I have often been asked what can be done to prevent the occurrence of the disease in unaffected members of a family in which it has appeared. I have always advised the use of quinine in ten to fifteen-grain doses early in the morning. I am satisfied that large doses often act as a preventive, and that in these cases the quinine does not so readily produce the ordinary symptoms of cinchonism.

In using strychnine I think that the best preparation is the arseniate, which I give in the *granules dosimétriques* of Burggraeve, containing half a milligramme, or about a one hundred and twenty-fifth of a grain. The patient takes three to six or more granules a day, and continues it for a month or two. In that way many of the sequelæ can be prevented.

Dr. FRANK WOODBURY said: I look upon influenza as essentially an intoxication. In Europe epidemic influenza, or the grippe, is now pretty well accepted as having for its cause the bacillus of Pfeiffer. It is stated that pure cultures of this bacillus will reproduce the disease in animals, thus fulfilling the requirements of a specific, infectious germ. Pfeiffer's bacillus, however, is, like the tubercle bacillus, often found in association with the staphylococcus and the streptococcus and other bacteria of suppuration, thus accounting for the organic inflammations. As the influenza bacillus is not found in the blood, it probably acts by its products principally upon the nervous system.

It is very possible that the germ of influenza may have suffered some modification in its development and pathogenic effects, owing to different climatic conditions in this country from those of Europe, so that we should not be surprised to find modifications in the course of the American disease, such as Dr. Seiler insists upon. That there is any ætiological difference between the two kinds of epidemic influenza has not been suspected; possibly Dr. Seiler's observations may have been upon an entirely distinct disease.

The portal entrance of the poison into the system is worth considering. In most cases the culture ground of the bacillus is probably located in the upper air-passages, and I am inclined to think that the tonsils and the naso-pharynx are the special points of election. In others the bronchial mucous membrane is most affected, while in other cases the gastro-intestinal canal is the particular place of development. It has occurred to me that, just as in the administration of morphine hypodermically, the effects of the drug are most marked if injected in the neighborhood of the seat of the pain, although we know that the drug acts through the general circulation, in a similar way the well-recognized varieties of influenza may be connected with the several culture-fields of the bacillus, the toxine acting most virulently in its immediate neighborhood, producing cerebral, gastro-intestinal, or broncho-pulmonary phenomena, which have been alluded to.

This leads me to speak of the prophylaxis of influenza. I can indorse what Dr. Cohen has said with reference to quinine. I employ it as much for antiseptic and prophylactic purposes as for its tonic effects. The mouth and throat should be kept clean by the use of mild antiseptics, and the naso-pharynx by the use of Seiler's pastilles or Dobell's solution, and the throat carefully watched. There is no question in my mind that the disease is contagious; when it appears in one member of the family others are liable to be affected. This has been established by the local epidemic which was reported by Dr. J. W. White and Dr. Simes to this society several years ago. It will be remembered as the case of Dr. S. S. White, who died of influenza in Paris, and whose body was brought to his home in this city, whereupon a number of persons who were in the room when the casket was opened contracted the disease, although there were no other cases in the city at the time.

In the few cases where I have used benzoate of sodium I have been pleased with the result. I have especially relied on strychnine, given in the acid solution of the hypophosphites according to the formula of Dr. Gerhard. The strychnine is given in doses of a thirty-second of a grain, gradually increased. With this I have used coca, and in regulating the diet I have found the juice of fresh fruits, such as the orange and pineapple, to be of service in assisting the weakened digestion. These juices have been shown to have considerable peptonizing power over albuminoids, and the salts they contain possess diuretic and antiscorbutic effects which are useful in improving the condition of the blood.

Dr. WILLIAM S. STEWART said: There is a great variety in the manifestations of influenza, but the ordinary influenza which is so common in this country is certainly very contagious. The influenza of *la grippe* is a different affection from the ordinary influenza. I do not think that it is particularly contagious. I have seen grave and serious cases where no other member of the family was affected.

In regard to treatment, I wish to say a word as to the bromides, particularly in those cerebral cases that would be liable to be affected by quinine. I have combined the bromides with gelsemium with great benefit. In some of these cases if you give quinine you only intensify the pain and delirium. When the cerebral suffering is relieved then it is important to give iron, quinine, and strychnine, and it may be aromatic spirit of ammonia, to tone up the system and to overcome the heart-depressing effect of the disease.

Dr. SOLIS-COHEN said: I am pleased to note that Dr. Curtin and Dr. Watson in some of their conclusions confirm those which I published in an article upon Catarrhal Fever, contributed to the *Medical and Surgical Reporter*, October 29, 1887—some time previous, therefore, to the enlarged experience which we now have. One point which I endeavored to make was that influenza is always with us, but that except in times of widespread epidemics it was only recognized as such by those who, through teaching or early experience, had had their attention specially directed to it. This is, I think, an important matter and will bear emphasizing.

I am also glad to note that experience has confirmed the usefulness of the salicylates in this disease. In the cases which came under my observation in 1885, 1886, and 1887, and upon which the paper referred to was based, I had found cinchonidine salicylate apparently curative, and so reported. I have more recently used sodium benzoate in early cases with much benefit, especially those in which there was a tendency to suppression or great diminution of urine or which exhibited severe pains in the loins.

The value of strychnine in the prevention and treatment of the distressing sequelæ can not be overestimated. The drug should be given in small doses frequently repeated.

Dr. Curtin and Dr. Watson emphasize the great sweating; I have been much impressed with this in my own experience. I remember one case in an old man, in 1889, in which profuse sweating and subnormal temperature were the only objective symptoms of the disease. This continued for two weeks, and I am satisfied that if that patient had not been put to bed and kept there with the external application of heat and with the administration of hot drinks, of cocaine and restoratives, he would have died, almost without realizing that he was sick. He had complained merely of discomfort in the throat, nothing to account for the symptom being discernible on examination.

Dr. SAMUEL WOLFE said: I have observed a considerable number of cases of the intestinal form in which the symptoms resembled those of dysentery, but the affection yielded to the same treatment as did other forms of grippe. The affection of the nervous system is a very large element in the disease, both in its onset and in its sequelæ. The variability of the seat of attack shows this to be the case. The sequelæ—insanity, meningitis, and neuritis—point to a secondary poison affecting the nervous system. Many chronic nervous affections date back to an attack of grippe.

Influenza is comparable to diphtheria, inasmuch as we have the acute symptoms due to primary poisoning and the secondary symptoms due to poisons generated during the disease.

I would take exception to the statement that influenza is similar to the ordinary colds which we always have with us. The best treatment for an ordinary cold is trying to shake it off; this in influenza would lead to prolonged convalescence or sequelæ. The most valuable element in the treatment of influenza is rest. The patient can do better without any drug than without rest. This rest should be prolonged until the patient can make efforts without tire. This difference alone proves that influenza is dissimilar to an ordinary cold.

As to therapeutics, I believe that quinine is one of the best remedies, not in one large dose, but in smaller doses frequently repeated (four grains every two hours) until some cinchonism is produced, and this should be brought about in the early part of the day. I would rather do without any other drug than give up quinine. In the intestinal form, salol is a valuable remedy and may be combined with quinine. The neuritis is to be treated like other forms of neuritis. Hypodermic injections of cocaine (in doses of from one eighth to one half grain) near the seat of pain, and repeated twice in the twenty-four hours, relieve the pain not only for a short time but permanently, and bring about an earlier convalescence.

Dr. Solis-Cohen said: Replying to Dr. Wolfe, I did not mean to say, and I trust I did not say, that influenza is the same as an ordinary cold, but I wish to emphasize the fact that influenza is not merely an epidemic disease, that it is seen every year and every month, and that many cases of influenza are ordinarily mistaken for "colds," for acute catarrhs of nose, throat, bronchi, stomach, or intestines, and even in some instances for typhoid fever and for rheumatism. Influenza is at times the easiest and at other times the most difficult disease to recognize. The opinion of those who have most closely studied the affection is that it is a disease of intoxication, due to a specific poison, depressing the organic nervous system. This poison may be the result of the development of a microbe, but as yet this microbe has not been definitely proved to exist. In consequence of the organic nervous depression we have, for example, labored respiration from pneumogastric failure even where the lung can not be shown to be much involved. The general depression and the severity of symptoms, not to be accounted for by signs discoverable upon physical examination, differentiate the disease from ordinary "colds." Besides this disproportion of symptoms to signs, there are a number of minor points—for example, general soreness or aching, or localized pain, such as infra-orbital or supra-orbital neuralgia, and the neurotic character of many symptoms, such as dyspnœa and cough, and cutaneous hyperæsthesia. The general course of the affection is likewise significant. It is rarely confined to a single physiologic apparatus, but beginning as a coryza or a tonsillitis may end as a diarrhœa, or beginning with gastric symptoms terminate as a broncho-pneumonia or a laryngitis.

When the true nature of cases is not recognized and they are allowed to go untreated, or rest is not part of the treatment, serious sequelæ are often developed. It was the observation of such sequelæ, and especially of chronic broncho-pneumonia in children attending the Medical Dispensary of the Jefferson Medical College Hospital during my early years of service there, that first impressed me with the facts recorded.

Dr. Seiler said: The diversity of opinion as to symptoms and treatment lies in the fact that we indiscriminately speak of grip, influenza, and *la grippe*. We also speak of fever and catarrhal pneumonia. High temperature does not constitute fever. The disease consists of infiltration of the mucous membranes as a result of an intoxication. In American grippe, the benzoate of sodium is the best remedy. In influenza, quinine is of service. The treatment of the sequelæ is to be guided by their character.

Dr. Curtin said: As to the effect of quinine, as stated by Dr. Seiler, I recall three cases of insanity following influenzal attacks which occurred before any treatment was instituted.

Dr. Watson said: It may be that Dr. Seiler has in mind catarrhal fever. In that affection there may be low temperature, moist tongue, and all of the symptoms which he has described.

As to antidotes, I have used benzoate of sodium in many cases, but did not get any better results than from other remedies, such as salicin and the salicylates. I have seen five cases of insanity following influenza where quinine was not used, and many cases persistently using it which did not become insane. This should be distinctly stated, lest Dr. Seiler's experience should be understood to be the usual one.

Miscellany.

American and English Sanitation.—The *Lancet* for March 10th, commenting on a certain embarrassment of the International Sanitary Conference now sitting in Paris over the American delegates' expression of our national views on promiscuous emigration, says:

"In order to understand these views it is first of all necessary to realize the very large measure of autonomy or home rule enjoyed by the various States that form the Union. The States are very jealous of their rights, and have been particularly reluctant to hand over to the central authority—*i. e.*, the Federal Government—any right to interfere with their sanitary arrangements. Each State has its special laws of health and its own sanitary authority. The Federal Government can not exercise any control over these State sanitary authorities. In some States the public health laws are good and well administered, in others this is far from being the case. There is therefore a total want of uniformity. Those States that have a sea border do not agree with one another as to what kind of quarantine, if any, should be imposed on ships entering their ports. Of course, sanitary reformers have over and over again insisted that the same rules should be established in all the ports, and that such matters should not be left to the caprice of local authorities. The voice, however, of the sanitary reformers is lost amid the many other cries and political questions of the day. Nothing could be done till some urgent crisis arose which forced the whole nation to take an interest in these special and somewhat technical questions. Such a crisis occurred, fortunately, in the autumn of 1892. The action of the New York port sanitary authority in their treatment of passengers arriving from Europe caused, it will be remembered, a great outcry. It was then felt that a local authority should not be able to imperil the commerce of the whole country; also the inhumanity then displayed by a panic-stricken and incompetent local authority gave body and strength to the demand for national as opposed to State legislation. It was in consequence of this movement that at last a statute was enacted giving the Federal Government a right of control over all quarantine stations on the land and sea frontier. This was the first national sanitary law enacted in the United States. All the other public health laws have been adopted by individual States and do not apply to the nation at large. Naturally this, the first, national statute is very imperfect and insufficient. For instance, it gives the Federal Government control only over the quarantine stations, and no authority at all over the towns or neighborhoods of the quarantine stations. If, therefore, a passenger is released from a quarantine station, the Government can no longer watch him. In England, if a suspected crew or passengers are allowed to land, instructions can be forwarded to the authorities at their places of destination to watch over them in case they should become ill. This can not be done in America; at most it could only be suggested to the sanitary authorities of the various States concerned that it would be advisable to watch such and such a passenger. Some of these authorities, especially in the Eastern States, would understand the value of such advice, and act accordingly; but in other States, especially in those in the West, this would not be appreciated, and the advice would not be followed. Therefore all control over a passenger after he has left a quarantine station is lost, however great the danger of disease importation.

"The next question is, How far can the United States afford to incur this risk? It must be recognized, first and foremost, that the water supply in a great number of American towns is bad. In England many towns bring their water from long distances, and from places where there is not much risk of contamination. In America some towns are equally well favored in this respect, but they are not as numerous as in England. Then, again, in England many towns have filtering beds to purify their water supply. Such is not the case in America. Consequently, it is felt that in the United States, especially in thickly populated districts, there are many towns where the conditions are such as to render them liable to epidemics of cholera as severe as that which afflicted the town of Hamburg. Undoubtedly the Federal Government would be very pleased to apply in America the system which has been carried out in England and in France; but it is materially impossible to attempt anything of the sort. In England there is an army of well-trained and trustworthy medical officers of health, sanitary inspectors, disinfectors, etc.; in America this machinery does not exist; nor was it created in England in a day. It has been the slow result of hard and earnest work, and England has spent more than £100,000,000 for such purposes. What is at once possible and successful in England after all these sacrifices and all this work is not possible in America, where there has been as yet no national legislation and no joint effort. Therefore the American Government is not disposed to abandon quarantine; nor will this determination be shaken by the boasting of English sanitary authorities. England, it is urged, abandoned quarantine after it had put its house in order and not before. This abandonment of quarantine is, too, of quite recent date, and does not apply to Malta, Gibraltar, and other British colonies; in other words, while approving in the abstract of English methods, the American Government has not the means of carrying them out.

"The commercial situation in America is, moreover, quite different. America lives on its internal, not on its foreign, trade. What this internal commerce is may be judged in some measure from the fact that at the end of last year there were 63,800 kilometres more of railways in the United States than in the whole of Europe put together. Then there are in America the magnificent and lengthy navigable rivers. Nothing similar exists in Europe. Now, if cholera broke out in any part of America, we should have States imposing quarantine against arrivals from other States, and cities taking measures against other cities. Each State being free to do as it chooses, and panic aiding, restrictions of all kinds would be imposed that would check and ultimately paralyze the home trade and traffic of the United States. As this interior commerce is perhaps a hundred times more important than the exterior or foreign commerce of the United States, the Government does not feel disposed to sacrifice the hundred for the sake of preserving the one. It will base its action on this fundamental principle thus: Firstly, excepting the last two epidemics, the United States have always suffered from cholera when there has been cholera in Europe; secondly, cholera has always been brought over by emigrants who were actually ill, or by the soiled personal effects belonging to emigrants. In one case an emigrant brought over clothes which he had packed up in an infected district of Sweden. He started from a European port free from cholera, landed at an American port equally free from the disease, and then traveled a considerable distance into the interior. It was only when he reached his final destination that he unpacked his clothes, and there cholera broke out three or four days after his arrival. The United States Government sanitary advisers do not fear merchandise or saloon passengers, but they urge that precautions should be taken against emigrants.

"There is no desire to interfere with traffic and to place ships in quarantine, but precautions should be enforced, if not on the American side, then at the point of departure. The latter is the solution of the difficulty which the American Government desires to submit to the European powers. In the name of humanity and of good neighborly feelings, care should be taken not to ship over to America infected clothing or persons likely to convey infectious or contagious diseases; but, if this principle does not suffice, then, even from selfish motives, the European governments should act in the manner desired. A great deal has been said about the pilgrimages to Mecca, and it has been urged that, in English ships alone, as many as twenty thousand pilgrims have been taken to Mecca in a single season; but this is nothing when compared to the four hundred thousand, or so, emigrants who yearly go over to America. This great current of humanity traveling through Europe on its way to the New World exposes Europe itself to considerable danger, and it would be to the latter's interest if these immigrants were forced to observe laws imposing cleanliness, etc., from the moment that they commence their journey. Then, when finally the emigrant reaches his ship, he is stowed away in an overcrowded steerage, where the most unsanitary conditions prevail. The pilgrims to Mecca are not worse off than the steerage passengers to America; and the sanitary regulations of the pilgrim ships will be better in themselves and better applied than are those governing the steerage passengers to America. If considerable improvement in this respect is not enforced, the European powers will be the losers, because quarantine will be imposed on ships arriving in America, and this will not only injure the passenger traffic but also the exportation of merchandise to the United States. The American Government consequently desire that steerage accommodation should be considerably improved, that care should be taken not to allow persons likely to convey disease to embark, and that all soiled personal effects should be disinfected before they are taken on board.

"Such, briefly and without comment, are the views, with the causes underlying them, which, we have good reason to know, are held by the United States Government."

Sublimed Sulphur as a Topical Remedy in Diphtheria.—In the *British Medical Journal* for March 3d there is an article on this subject by Professor Bäumler, of Freiburg, who dissents from Jacobi's and Oertel's unfavorable opinion of sulphur, and says:

"I was first induced to try it by the recommendation given to this local treatment by Professor von Liebermeister, in his lectures on *Special Pathology and Therapeutics* (Leipsic, 1885, vol. i, p. 232), where he says: 'As a local application, I generally use powdering with crude sublimed sulphur, by abundantly applying with a thick, soft camel-hair brush the dry powder to the diseased mucous membrane. This powdering of the pharynx with sulphur is, according to circumstances, repeated every hour or every two hours, or only three or four times a day.' On the strength of several years' experience, I entirely concur with Professor Liebermeister's further remarks: 'I have the impression that by this treatment, when commenced early, I attain more than by any other which I had tried before, and that with these applications the cases, on an average, take a considerably more favorable course than without it.' I have repeatedly seen cases, in which gangrene of the uvula and part of the soft palate seemed unavoidable, take a favorable turn in a few days, the membranes becoming detached and the swelling going down, leaving much less loss of substance behind than was to be feared when first seeing the case. With less extensive disease we could frequently notice the first effects of the application to consist in a somewhat increased injection (not congestion) of the mucous membrane on the borders of the exudation, the latter becoming more sharply defined at its edges after a few applications, and then beginning to get loose and be detached.

"In the majority of fresh cases of diphtheritic sore throat, as well as of lacunar tonsillitis, two or three applications a day seemed sufficient, the patients in the meantime, when able, gargling with a weak solution of permanganate of potash, and being subjected to such general treatment as the case required (cool baths or the wet sheet, or occasionally a dose of antipyrin when there was high pyrexia, and great care as to feeding by mouth, or, if necessary, by the rectum).

"How the sulphur acts in these cases I am unable to say, and I may mention that there seems to be no particular difference in the action of sublimed or precipitated sulphur. Nor am I aware that as yet any experiments have been made with regard to the action of sulphur on the particular bacteria which cause diphtheritic and other kinds of sore throats (Loeffler's bacilli and streptococcus chiefly). But while anxious for the scientific explanation of the facts so frequently observed, we need not delay making the experience gained more generally useful.

"The action of this remedy being a merely local one, its principal field of usefulness will be diphtheria of the fauces, where it can be applied directly and abundantly. The larynx, also, and in certain cases the upper part of the trachea, may be reached by using a curved insufflator for blowing in the powder. But no effect can, of course, be expected when the disease extends into the bronchial tubes, or when the general blood poisoning has gone beyond a certain degree, nor even locally, where extensive sloughing has already taken place in the throat, and when, in consequence thereof, rectal feeding is the only, and then mostly insufficient, means to prevent exhaustion.

"I am unable to say whether remedies which have more recently been recommended, such as pyoctanin or the peroxide of hydrogen, which has found such warm supporters in America, give even better results than the sulphur, as, especially in severe cases, I did not feel justified in foregoing the benefits of a remedy of whose efficacy I have had ample personal experience."

An Indian Medical Congress.—We learn from the *Indian Medical Gazette* that the proposal to have a medical congress in India was considered at a meeting of the council of the Calcutta Medical Society on January 24th, when it was decided that an Indian medical congress should be held in Calcutta at the beginning of January, 1895. The preliminary arrangements were discussed and a general plan was sketched out. It was decided that in each province local secretaries, native as well as European, should be asked to co-operate with the Calcutta secretaries, and it was further decided that the sections into which the congress should be divided should be:

1. Medicine, including pathology. 2. Surgery. 3. Obstetrics and diseases of women and children. 4. Public health. 5. Legal medicine and allied subjects.

It was decided that the congress should be widely advertised, and that all medical men practicing in every part of the world, but especially in India and the East, should be invited to take part in it and submit papers to be read in the different sections.

Diiodoform.—*La Presse médicale* for February 24th contains an article by M. L. Maquenne in which he remarks that, owing to the strong and persistent odor of iodoform, a large number of physicians have been obliged to do away with it in their private practice. For a long time they have searched for a drug to replace it, which would produce the same effects, and without the disagreeable odor; but it has been difficult to find one with an organic combination comparable to iodoform with regard to the abundance of iodine it contains and to its physiological action. Diiodoform, which is not to be confounded with the deodorized iodoform of commerce, is entirely satisfactory in this respect. It is a definite iodide of carbon, which answers to the formula C_2I_4; it is derived from ethylene or olefiant gas, and should be called, according to the rules of chemical nomenclature, periodized ethylene. It will be seen that it differs from iodoform, CHI_3, in containing no hydrogen and containing twice as much carbon; theoretically, it may be considered as a product of the condensation of iodoform in which two particles are united with loss of hydriodic acid. This, as well as its known physiological properties, has caused it to be commonly known as diiodoform. Its centesimal composition is extremely like that of ordinary iodoform, as will be seen by the following comparison:

	Iodoform.	Diiodoform.
Iodine	96·70	95·19
Carbon	3·05	4·81
Hydrogen	0·25	0·00
	100·00	100·00

The quantity of iodine is very nearly the same, exceeding greatly that contained in iodol and aristol, which are sometimes used instead of iodoform. This explains the analogy of the action of these two substances and their undisputed superiority over all other antiseptics having iodine for their base. Diiodoform is a yellow substance, almost entirely odorless in an ordinary temperature, which melts at 377·6° F., and becomes decomposed into its elements, carbon and iodine, under 392°; it is perceptibly volatile when heated, and can be sublimed. Completely insoluble in water, slightly soluble in alcohol, diiodoform is easily dissolved in carbon disulphide, in chloroform, in benzene, and in the majority of hydrocarbons, and it is deposited in the form of beautiful prismatic needles, which are pulverized for use like iodoform crystals. Diiodoform can be kept indefinitely in a dark place, but is susceptible to light. Under its influence it becomes darker and emits a slight odor somewhat like that of the hypochlorites. In order to prevent this, diiodoform, and all preparations in which it is contained, should be put into bottles colored green, yellow, or red. It is recommended also, when employing it, not to expose it too long to a bright light. If these precautions are followed, it is possible to have dressings that are strictly odorless. Experience has shown that it is well borne by the stomach, and that it is practically non-poisonous. With regard to its germicidal action, it is the same as that of iodoform—*i. e.*, rather weak.

Diiodoform seems to be one of the most energetic cicatrizants known; at least, says M. Maquenne, that is the result of a number of experiments with it in chancrous ulcers and in all kinds of severe wounds, whether accidental or surgical. At the present time it is the only antiseptic known which can replace iodoform in special applications. Different methods are employed in the preparation of diiodoform, but the most advantageous consists in the direct transformation of acetylene, by the simultaneous action of iodine and alkalies, into periodized acetylene. This is then treated with iodine in excess, which is combined by simple addition, yielding immediately diiodoform in its crude state, which can be purified by crystallization in any solvent.

Extract of Bone Marrow in the Treatment of Anæmia.—In the *Lancet* for March 10th Dr. J. Dixon Mann, of Manchester, having assumed that the red marrow of the bone was probably the chief agent in promoting the development of red corpuscles, says that he was led to suppose that an extract of this substance, introduced into the system in cases of anæmia, might act as a stimulant to the formative process and increase the rate of production of the red corpuscles. He remarks that in adult animals, such as the ox, the red marrow is limited to the large bones of the trunk, the thick bones of the skull, and the heads of the long bones, while in young animals, such as the calf, it is more abundant and may be found in the shafts of the long bones as well as in the other bones named. As the tissue forming power is more active in young animals than in old ones, the bones of the former are preferable, he thinks, as a source of marrow extract. To prepare the extract, the heads of the long bones, obtained from animals freshly killed, together with other portions of bone which contain red marrow, are broken into small pieces and digested in glycerin with frequent agitation. When the extraction is complete, for which several days are required, the extract is filtered and is then ready for use. It is of a red or reddish-brown color and has no unpleasant taste or odor. It may be given in teaspoonful doses once or twice a day, either by itself or spread between thin slices of bread. The first case in which Dr. Mann tried the extract was that of a little boy who was a subject of hæmophilia. He had been in a hospital repeatedly for attacks of hæmorrhage. On each occasion the bleeding had ceased, but the boy had never lost the pallor of pronounced anæmia, although he had been treated with iron, arsenic, cod-liver oil, and all kinds of appropriate nourishment. On the last occasion of his having been admitted the red corpuscles had been counted after the hæmorrhage had subsided, and been found to be 3,800,000 to the cubic millimetre. Then, on the 13th of September, 1893, the patient was put upon the use of marrow extract without any other treatment, and after an interval of three weeks the corpuscles were counted again; they then numbered 4,190,000, and a month later they had reached 4,400,000. Coincidently with this increase, says Dr. Mann, there was a marvelous improvement in the child's appearance. His face acquired a healthy color that had never been observed previously during his visits to the hospital. In the second case, that of a girl, twenty years old, with long-standing anæmia, the corpuscles numbered 3,700,000 to the cubic millimetre. After she had taken the marrow extract for three weeks they had increased to 4,000,000, and then she left the hospital. In another anæmic girl the increase in nine weeks was from 1,350,000 to 3,680,000. A man was admitted for profuse hæmatemesis, and after the bleeding ceased the red corpuscles were found to be reduced to 1,070,000 to the cubic millimetre. He was put on the use of marrow extract without any other treatment, and when the corpuscles were next counted, on the fifteenth day, they numbered 3,050,000.

Women Doctors in Switzerland.—*Le Progrès médical* for February 24th refers to an article published in *La Revue scientifique* for January 27th, on the subject of women doctors in Geneva, based on statistics furnished by Professor Laskowski, of that city, in regard to the number of women students, and followed by remarks which it seemed impossible to attribute to M. Laskowski. *Le Progrès médical*, while quoting the figures given by M. Laskowski, is convinced that they prove absolutely nothing. M. Laskowski, it says, had lost sight of the women medical students in Geneva who had not finished their studies there, but who probably had submitted their theses to another faculty, and *La Revue scientifique* has done all that is possible to efface the wrong impression produced by the article in question. M. Laskowski absolutely denies all participation in it apart from the figures referred to, and, in response to an explanation demanded of him, says that he wrote a very eulogistic article, which was published in a Polish journal (*Tygodnik med. i pawiesci.*), on the women medical students of Geneva, who, it says, are distinguished for their high moral tone and their diligent and persevering work. If the figures given in the statistics are small, says M. Laskowski, it is because a large number of the women medical students of Geneva have given up their studies and returned to their homes on account of sickness, privations, insufficient means of existence, or marriage. It is probable, he continues, that this article, which has been misunderstood, badly translated, and embellished with unfriendly comments, has served as a foundation for those published in *La Revue scientifique* and in other journals.

If M. Laskowski does not advocate strongly the study of medicine by women, he would like to see a larger number of women doctors go to Russia, where not only could they make an honorable living by their profession, but exercise a great moral influence over the ignorant and superstitious population. The editors of *Le Progrès médical* have published this part of M. Laskowski's letter solely to defend their colleagues from any injurious suspicions that might rest upon them. With regard to the figures given in Professor Laskowski's statement, they say, the author himself has in part explained them, and *La Revue scientifique* has given a still better explanation.

The Treatment of Influenza.—Dr. Juchel-Rénoy closed a recent clinical lecture at the Cochin Hospital, Paris, published in the *Journal des praticiens* for March 7th, by dividing cases of influenza, as regards treatment, into the grave, the pseudo-grave, and the benign. For the first class he recommended bathing, refrigeration, and the use of alcohol. In the second, he advised small quantities of alcohol, plentiful drinks, and revulsion by means of mustard plasters and dry cupping. For the third class, if there was pain, he said it was allowable to use antipyrine and salipyrine, but he impressed it upon his hearers that these drugs should not be used in the treatment of influenza unless the kidneys were performing their function well. He added that antipyrine was dangerous in all cases of profound and long-continuing infection. As for quinine, he said, it was of no use whatever. This he had proved over and over again.

Pyoctanine as a Remedy for Ptyalism.—In the March number of the *Annales des maladies de l'oreille, du larynx, du nez et du pharynx* there is a short abstract of an article by Heimann, published in the *Therapeutische Monatshefte* for February, in which the author relates a case of idiopathic ptyalism that had withstood various kinds of treatment, but was finally overcome by painting the whole of the interior of the mouth twice a day with a 1-to-1,000 solution of pyoctanine. The treatment lasted three weeks and the cure was permanent.

Lectures and Addresses.

LECTURES ON THE DIAGNOSIS OF ABDOMINAL TUMORS.

By WILLIAM OSLER, M. D.,
PROFESSOR OF MEDICINE, JOHNS HOPKINS UNIVERSITY.

Lecture III.—Tumors of the Liver.

(*Concluded from page 389.*)

III. Syphilis of the Liver.—Of four cases diagnosticated during life as syphilis of the liver, two presented definite tumors. Diffuse syphilitic hepatitis does not produce a tumor, but gummata, either in the inherited or acquired disease, may form tumors in two stages: first, when fresh and developing, constituting nodular masses of large size, which may persist for months; and, second, gummata which have undergone cicatricial contraction and healing may so fissure and divide the liver by bands of connective tissue that an extremely nodular, irregular mass may occupy the right hypochondrium. Of the four patients this year, two died, but in neither of them were tumors felt. I show you here a photograph of the liver of one of them (Fig. 26), which will give you an idea of the extraordinary subdivision of the organ, an extreme grade of which forms the so-called "botryoid" liver, in which globular masses of normal tissue are held together by fibrous bands. The other case also, which came to autopsy, had an extremely irregular liver, and was of exceptional interest, inasmuch as the recurring ascites, for which she had been tapped repeatedly, disappeared entirely under iodide of potassium, as did also nodes on her shins. In the following cases definite tumor masses were present and the correctness of the diagnosis in both instances was in a measure borne out by the therapeutic test. In anomalous tumors of the liver it is well to bear in mind that gummata may form flat or nodular masses in the epigastric region[*] which may persist for a long time, and which may, under treatment, disappear as satisfactorily as gummata of the long bones or of the testes. One of the first private patients who applied at the hospital was a young man aged about twenty-eight years, who presented just below the ensiform a flat tumor mass evidently attached to the liver, the nature of which had been very much discussed. He was sent to me for an opinion as to the advisability of a laparotomy. A positive history of syphilis was obtained and he was urged to have a thorough course of treatment. I did not see him again for nearly a year, when, to my astonishment, the tumor had practically disappeared.

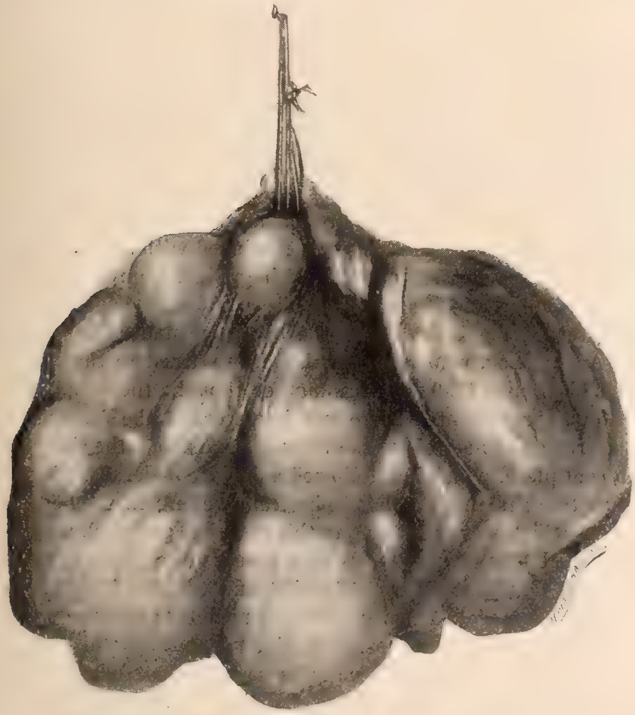

Fig. 26.—Showing the extreme irregularity of a syphilitic liver.

Case XXX. *Prominent Tumor Mass in the Epigastrium; Disappearance in Four Months under the Use of Iodide of Potassium.*—John C., aged thirteen years, seen November 11th with Dr. Thayer. He had been in hospital during my absence in the summer with a tumor connected with the liver. The notes made at the time are as follows: Admitted July 13, 1892, complaining of pain in the right hypochondrium.

The father is living and is paralyzed; mother is living and well; two sisters and one brother died young; has three brothers and four sisters living.

As a child he was well, with the exception of enlarged glands, which, at about his fourth year, appeared on the right side of the neck and discharged for nearly three years.

His present illness began about three months ago with pain in the right side, which has continued, and two weeks ago became much worse; the abdomen became swollen, particularly in the upper zone and to the right side. The feet have never been swollen nor has he had any swelling of the face. Since his illness began there has been progressive loss of weight, and he frequently sweats profusely at night.

Present Condition.—Poorly nourished and not very well developed lad. Lips and mucous membranes of a good color.

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[*] A case illustrating an error in diagnosis is that of hospital number 5234, Joshua M., aged fifty-four, admitted May 16, 1892, with swelling of the abdomen and an illness of nearly a year's duration. The patient was a large, powerfully built man; had always enjoyed good health, and denied venereal disease. For nearly a year he had had trouble in the abdomen, and had twice been slightly jaundiced. The legs had been swollen, and he had had shortness of breath. The examination showed an enormously enlarged liver. The whole of the upper part of the abdomen was filled with a hard, irregular, nodular mass, corresponding to the greatly enlarged liver. The lower border was felt midway between the umbilicus and the pubes. There were prominent bosses on the surface of the liver, and from its great size and irregularity there seemed to be no question as to the correctness of the diagnosis of secondary cancer of the organ. No primary disease could be determined, and there was decided hyperacidity of the gastric juice. The patient remained in the hospital for a month and gained slightly in weight, but the liver developed still further, and the irregularity on the surface was more marked. An aspirator needle was thrust in, but nothing but blood obtained. Naturally enough the diagnosis was entered as cancer of the liver. Dr. E. T. King, of Washington, under date of February 10, 1894, writes that he has Joshua M. under his care at present. He has a well-marked syphilitic skin eruption, and the liver, still enlarged, extends nearly to the pelvis. The time element in this case, I should think, definitely excludes cancer, while the syphilitic rash on the skin is suggestive in the highest degree that the whole trouble is specific.

Skin clear, not jaundiced. Scars on the neck just below the right ear and one on the episternal notch. The cervical glands are not enlarged; the inguinal glands are only just palpable. The epitrochlear glands are enlarged; there are no nodes, though about the middle of the right tibia there is a slight roughening. There are rhagades at the angles of the mouth; the corneæ are clear; the upper central incisors are well formed. Examination of the blood is negative.

The thorax is somewhat expanded in the lower part, particularly on the right side. Examination of the lungs and of the heart is negative.

The abdomen is prominent in epigastric and right hypochondriac regions. The hepatic flatness begins in the sixth interspace in the nipple line and extends two fingers' breadth below the costal margin. The epigastrium is filled with a firm, hard mass, which appears to be the left lobe of the liver or a mass continuous with it. It extends in the median line within two centimetres of the umbilicus, and a slight notch can be felt. The surface is somewhat irregular and a distinct rounded nodule can be felt a little above and to the right of the navel. In the nipple line the edge of the liver is difficult to feel, as the abdominal walls are rigid. The splenic flatness begins at the seventh rib and is continuous with that of the mass in the epigastrium. The edge of the spleen is not palpable.

The urine was clear, lemon-colored; no albumin; no tube casts. He had slight fever; temperature on admission 100·5° F., and every day for a week it rose to 100° F. The patient was placed upon iodide of potassium, five-grain doses three times a day, increasing rapidly until he took a drachm three times a day. He improved in weight and gained seven pounds within a month. The mass in the epigastrium gradually disappeared.

The condition to-day, November 11th, is as follows:

The boy has grown somewhat, though he looks thin. The tongue is clean; the lips and mucous membranes are of good color. He has no cough.

He certainly has not a luetic facies, though the scars at the angle of the mouth are suggestive. The edge of the liver does not appear to be below the costal border in the nipple line; flatness begins at the sixth rib in the nipple line. Palpation in the epigastric region is negative until the extremity of the angle is reached, and here, just below the tip of the ensiform cartilage, can be felt a hard, firm ridge with, in the right xiphoid angle, a little prominent projection the size of a walnut. Just to the left of the tip of the ensiform cartilage a second prominent but smaller elevation can be felt. The one to the left, when he draws a deep breath, can be seen distinctly in the descent of the liver as a slight prominence beneath the skin. The edge of the liver comes about a finger's breadth below the tip of the ensiform cartilage and fills up the entire left costo-xiphoid angle.

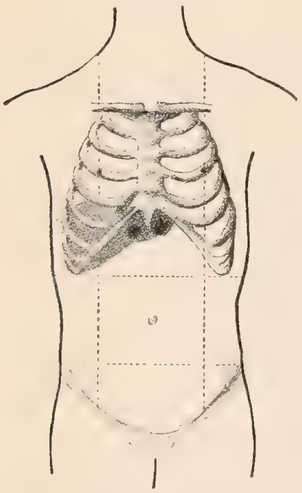

FIG. 27.—The situation of the tumor nodules in Case XXX.

This case is similar in some respects to one reported from my clinic at the University Hospital by Dr. A. C. Wood,* the history of which is so interesting that I abstract it here: "He had an eruption on the skin when six months old. Did not have snuffles. Has always been robust. For several months back his mother has noticed his abdomen becoming more and more prominent. The patient has lost flesh of late. Has had no jaundice. The boy, aged thirteen, is fairly well grown, well nourished, looks a little pale; abdomen prominent, and on the right side between the navel and the costal margin there is a distinct hemispherical swelling about two inches in diameter. The tumor descends slightly on inspiration. The superficial abdominal veins are not especially dilated. The upper teeth are not good, but are not notched. He has not a syphilitic facies.

"On palpation, the lower zone of the abdomen is soft. In the left hypochondriac region the edge of the spleen is distinctly felt, with its notch at least two fingers' breadth below the costal margin. Toward the right hypochondrium a firm, solid mass is felt, the edge of which is ill-defined below and to the right. Above, it seems to pass directly beneath the costal margin in the position of the liver. The tumor is painless. The liver dullness begins in the midsternal line at the level of the sixth costal cartilage, in the nipple line at the upper border of the fifth rib, and is directly continuous with that of the tumor and reaches to within a finger's breadth of the navel. In the axillary line there is dullness from the upper border of the eighth to the lower border of the tenth rib. The left lobe of the liver does not appear to be enlarged. The splenic dullness begins at the upper border of the eighth rib and extends two fingers' breadth below the costal border.

"Fowler's solution was prescribed, four minims three times daily, to be increased by one drop each week. This was taken at intervals until the middle of January, about five months, when it became necessary to discontinue it on account of nausea and vomiting. During this time the color of the face had improved, the tumor had enlarged, and, on deep inspiration, the margin now reached the navel, and it was rough on the surface.

"In October, 1888, the patient complained of pain in both tibiæ. The pain was thought to be periosteal, and five grains of iodide of potassium were ordered to be taken three times a day. When seen again, two months later, the tumor was more nodular, the spleen had increased in size, extending three inches below the costal margin. The general condition of the patient remained good. He was now given one grain of calomel three times daily, and instructed at the end of three weeks to intermit for a week. This was continued with similar intermissions for about six months, with gradual improvement in appetite, color, and general health."

After leaving Philadelphia the boy came under the care of Dr. A. C. Wood, who reported that he returned to the hospital in February, 1890, and the mother thought there had been a slow improvement. There was, however, on the forehead a small region of necrosis of the frontal bone about the size of a ten-cent piece, which had followed a definite node. The interesting thing is that the hemispherical swelling in the hepatic region, which was so striking in this case, had practically disappeared. I demonstrated this case on several occasions before my class in the session of 1887–'88 and of 1888–'89, and on each occasion the hemispherical swelling on the right side, between the navel and the costal margin, was unusually distinct—so much so that it could readily be seen by the students from the most distant benches of the amphitheater. I confess that until October, 1888, when there were pains of the tibiæ, I did not think the case syphilitic, but regarded it as an anomalous tumor of the organ. In October, 1888, however, he was given iodide of potassium and subsequently calomel. Its syphilitic nature seems to be definitely established by the development of the gummatous tumor on the forehead, which subsequently broke down and left a patch of necrosis.

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* *University Medical Magazine*, vol. ii.

Case XXXI. *Syphilis of the Liver; Convulsions; Right Hemiplegia; Irregular Tumor over the Left Lobe.*—On May 3d J. M., aged forty-seven years, returned by appointment to report on his condition. I had not seen him since the 25th of September of last year. The case is one of a good deal of interest with reference to the diagnosis and treatment of syphilis of the liver. I saw him first in March, 1892.

The patient is a stout man, well built, but looks ten years older than the age he gives. He is a traveling salesman, and, in response to an inquiry as to his habits, gave the characteristic reply that "he took his luck on the road." He had syphilis in 1866, and was treated for some time. For eighteen months or more he had been complaining of dyspepsia and irregular pains in the abdomen. In December, 1890, he had vomiting, and last March, just a year ago, the pains were very severe—so much so that he had to have a hypodermic injection of morphine. He had no jaundice after this attack. He went to the country, stayed until June, and improved a great deal, but he had there another severe attack of pain in the abdomen. Through the summer he lost thirty five pounds in weight. In the autumn he had an attack of jaundice which lasted for nearly two months and gradually disappeared. This jaundice set in with pains, which were very severe. Two months ago, while sitting in his office, he fell, lost consciousness, had a convulsive seizure, followed by left hemiplegia. Gradually the power returned. He had another convulsive seizure, with loss of consciousness, a week ago, not followed by paralysis.

When seen, March 24th, he was well nourished, not jaundiced. The point of special note was the examination of the abdomen. The panniculus was thick; the liver was enlarged. The right lobe felt somewhat irregular, but there were no definite nodules. The gall-bladder was not palpable. In the left hypochondriac region, emerging beneath the costal border, was a flat tumor mass, which extended in the parasternal line nearly to the level of the navel. It was sensitive, firm, felt about the size of the palm of the hand, and descended with inspiration. It was superficial, no definite edge could be felt, and to the right it could be separated clearly from the edge of the liver (right lobe) in the right parasternal line. On percussion, its dullness could be separated definitely from that of the spleen.

Of course, the attacks of pain, one of which was followed by jaundice, were very suggestive of gallstones. On the other hand, the anomalous character of the tumor mass attached to the left lobe of the liver, the fact that he had had syphilis, and that he had had, without obvious cause, two convulsive seizures, made me suspect that possibly the mass on the liver was syphilitic in character. He was ordered thirty grains of iodide of potassium three times a day.

On the 16th of April I saw him again, after he had had for a week or more a very severe attack of nausea and vomiting. The mass referred to was very evident. A feature of interest was the development, about a month after beginning to take iodide of potassium, of an acute parotiditis on the right side, probably secondary to the abdominal disease, such as Stephen Paget has so well described.

I saw the patient again on September 25th. He had had no attacks, no jaundice, no pains, and had not had a convulsion for five months. He has taken the iodide at intervals. Lately he has had an ulcer on one tendo Achillis, which was very troublesome, but is now healing. He has gained in weight, has been able to attend to his work, and looks very well. The tumor mass which was so perceptible in the left hypochondriac region has almost disappeared. The edge of the left lobe of the liver can be distinctly felt.

May 3d.—He reports that he has kept well all through the winter. He has had no attacks of abdominal pain, no convulsions. He has gained in weight; looks well. The condition of the liver is practically negative. Nothing definite to be felt in the left lobe, only slight irregularity as it descends in deep inspiration.

IV. Cancer of the Liver.—With the exception of the fibromyoma of the uterus, cancer of the liver may constitute the largest tumor met with in the abdomen. In extreme cases, as in the photographs I here show you, the entire cavity is occupied by the enormously enlarged liver. The diagnosis is not difficult, particularly in the secondary cancer with great enlargement of the organ. Cases of primary cancer, and especially the peculiar form of "cancer with cirrhosis," may be extremely difficult to recognize A very large proportion of all cases are secondary, and characterized by a very rapid growth, profound cachexia, and often jaundice. The new growth may be so diffusely scat-

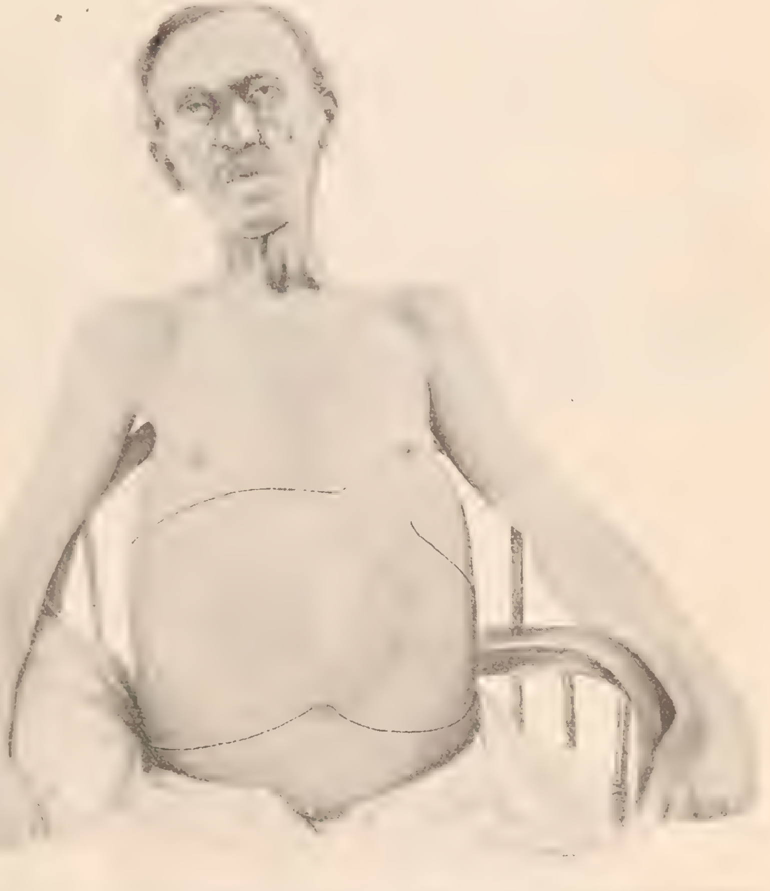

Fig. 28.—Cancer of the liver, showing the enormous increase in the area of dullness. The shaded areas show the situation of the visible tumor masses.

tered throughout the organ that the enlargement is uniform and the surface is smooth; but more commonly there are large outgrowths on the surface or at the edge of the liver, which form prominent tumors of the greatest value in diagnosis. Not infrequently, indeed, they project beyond the surface of the liver far enough to be seen through the thin abdominal walls, as in this photograph from a case in the hospital last year (Fig. 28). In a patient with cancer of the liver (secondary to disease of the cæcum), who recently died on the surgical side, these masses were of great prominence, as this photograph shows (Fig. 29). These nodules are known in the older literature as Farre's tubercles of the liver. They vary in size from a walnut to an orange; they are usually firm and hard, the edges rounded, and the centers cupped—a sort of umbilication caused by the fibroid and degenerative changes going on in the central portion of the mass. Frequently these characters can be determined on palpation, and are of special importance in diagnosis. In the following cases tumor masses were present:

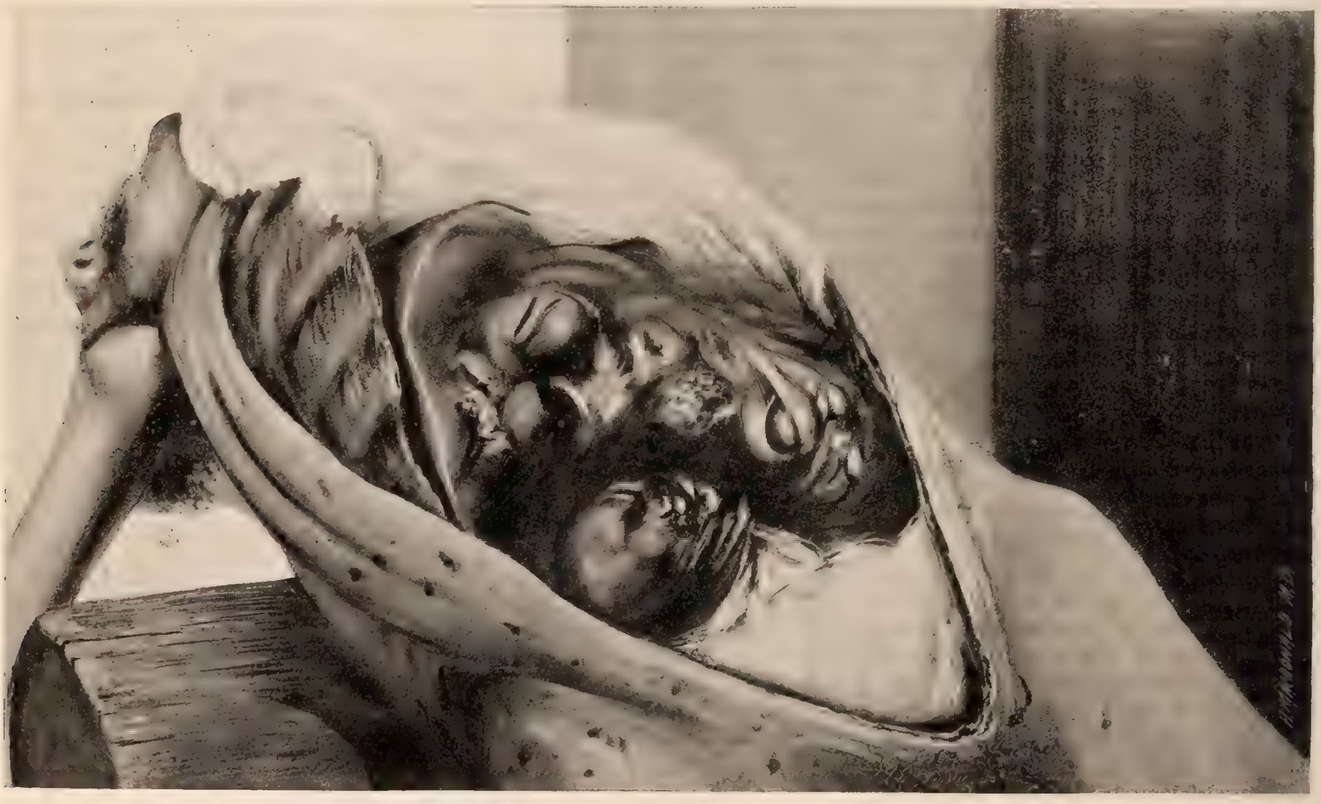

Fig. 29.—Showing the nodular masses of cancer of the liver.

Case XXXII. *Cancer of the Liver; Chills, Fever, and Sweats.*—Mrs. S., aged sixty-nine years, seen with Dr. Amanda Norris on April 30th. Family history good; husband died in 1879 of cancer of the stomach.

The patient has been a strong, healthy woman. During the past winter has not been in good health, has been losing in weight, and has had indigestion. She has kept about, and the condition was not thought to be serious until March 4th, when she had a severe chill with pain in the right side. There was no cough, no signs of any pleural or pulmonary trouble, nor had she any jaundice. The chills recurred very frequently, sometimes every day; she was in bed for three weeks. The fever rose, and she had heavy sweats. She had also marked gastric symptoms, and vomited almost every day; never brought up any blood, and never very large quantities. She got somewhat better, and for a couple of weeks was up and about and seemed improving, and she had no chills. During the past three weeks the chills and fever have been again present, and she has had vomiting and inability to take much food. The temperature goes up to 102° and 103°, and the chills are sometimes severe. The bowels have been constipated; she has never had any jaundice.

Present Condition.—Patient is not cachectic-looking; face has a grayish, rather anæmic aspect. Tongue is slightly furred. Examination of the thoracic organs is negative.

The abdomen is somewhat full; panniculus moderately thick; the upper zone of the abdomen a little prominent. On palpation, it is everywhere soft on the left side and below. Occupying the upper umbilical and all of the epigastric regions and extending to the right in an oblique line toward the anterior superior spine there is a solid resistant mass, which descends on inspiration. It is evidently a greatly enlarged liver. In the anterior axillary line the edge descends unusually low, and here, at a short distance from the anterior superior spine, there is a prominent nodular mass as large as the top of a lemon, firm, hard, attached to the liver. It gives one the impression of a secondary nodule. A second mass, not so large, can be felt just above the border of the liver in the nipple line, and a third at the edge of the liver, a little beyond the left upper sternal line. The upper limit of the liver dullness is greatly extended, particularly in the nipple and anterior axillary lines. The stomach does not appear to be dilated. No tumor mass to be felt on deep pressure in the left hypochondriac and umbilical regions; the spleen is not enlarged.

As usual, the chills in this latitude had been taken to indicate malaria, and she had been saturated with quinine for weeks without any influence. Chills with enlarged liver mean in the great majority of cases suppuration, either abscess or pylephlebitis. Here in a woman the onset with pains and the early chills suggest, even in the absence of jaundice, that the whole trouble may depend upon gallstones, and that the chills may be associated with suppurative cholangeitis.

Chills and fever may, however, occur in cancer of the liver, and in this case the emaciation, the enlargement of the organ, and particularly the nodular masses, suggest the presence of a neoplasm. The chills and fever may be associated with the rapid growth of cancer, but in the liver the suppuration may be in some of the large bile ducts, blocked with the neoplasm. Dr. Norris wrote that subsequently jaundice developed. The fever persisted, and before her death the emaciation was extreme.

Case XXXIII. *Large Nodular Tumors at the Edge and Surface of the Liver.*—Mrs. S., aged about fifty years, consulted me January 24th, complaining of cough, loss of flesh, fever, and shortness of breath on exertion. There was slightly deficient expansion at the left apex, and a few râles in the suprascapular region. An examination of the sputum showed tubercle bacilli. I did not see the patient again until October 18th in consultation with Dr. Aaronsohn. She had had pleurisy on the left side, with some effusion, which had almost completely disappeared. She had become progressively weaker; had had some loss of appetite, but no marked gastric symptoms. On examination of the abdomen, however, there was felt a remarkable ridgelike tumor extending just below the level of the navel, with a very hard, everted, and irregular edge, above which was a sort of shallow groove. The abdomen was much relaxed and the intestines lay between the abdominal wall and this ridgelike mass. At first I thought it possibly might be the omentum curled up and indurated, but on more careful palpation it was evident that the indurated, irregular edge was continuous with the liver. The extreme hardness and irregularity were, of course, very suggestive of cancer, in favor of which also were the enlargement and the pain on pressure.

I saw this patient again in consultation on the 30th and 31st, and the two weeks which had elapsed had made a very striking change in the condition of the liver. It was considerably below the level of the navel. The irregularity was very much more pronounced, and definite nodular masses could be felt both at the edge and on the surface. One of these, a little to the left of the middle line, was at least six centimetres in diameter, with a rounded edge and a depressed center. The condition was still a little peculiar and unusual from the fact that the abdominal walls were extremely relaxed and the intestines lay in front of the liver, so that there was resonance as high as the costal margin. The growths in the liver were, from their local character, evidently secondary, and though the patient had profound anorexia, there was no evidence as to the seat of the primary disease. She died a few days after my last visit.

Case XXXIV.—*Enlargement of the Liver; Prominent Mass in the Upper Umbilical Region; Latent Cancer of the Stomach.*—Henry T., aged fifty-nine years, admitted October 4th, complaining of pain in the abdomen and back. Family history is good.

Has been a temperate man and has had no serious illnesses. Three months ago he says he was quite well. About eight weeks ago noticed that he had occasional pain in the abdomen, which for the past four weeks has been constant and of a dull aching character. He only stopped work three weeks ago; has lost, he says, thirty pounds in weight in two months. His appetite is poor; has never had any vomiting; has no nausea. Food makes no difference in the pain. Two days ago his feet began to swell.

Patient is a tall man, much emaciated. The skin has everywhere a sallow tint, and the conjunctivæ are slightly tinged. Tongue moist, covered with a white fur. Condition of thoracic organs is negative. Abdomen much distended in epigastric and hypochondriac regions, especially on the right side. In the upper part of the umbilical region there is a prominent mass which is to be seen readily, and which moves up and down with respiration. On palpation, it is felt to be separated by a distinct groove from the swelling in the right hypochondriac and epigastric regions. The surface is smooth, painless; no nodules are to be felt, but on the lower margin which extends to the navel it is distinctly irregular. The percussion dullness does not correspond to the edge of the mass, but is fully a hand's breadth above it. The upper limit of dullness is at the fifth rib in the nipple line, and at the seventh in the midaxillary. The splenic dullness is not increased; the edge is not palpable.

The urine was dark brownish-yellow and contained a faint trace of albumin.

There seemed no question at all that this was a liver enlarged by cancer, but at first the prominent mass in the umbilical region, which seemed separated from the upper part by a distinct groove, raised a slight doubt; but the profound cachexia, the rapid growth, and the irregular, nodular edge seemed conclusive. The primary trouble was not evident. The examination of the rectum was negative. A test breakfast, withdrawn fifty minutes after, gave fifty cubic centimetres of a dirty reddish-brown fluid consisting of undigested food, and showed a great many blood-cells. Free hydrochloric acid was not present. On the 10th he had been suffering a great deal of pain, and following three injections of a sixth of a grain of morphine at 9 A. M., 3 P. M., and 10 P. M., he became profoundly comatose, and died at 2 A. M. on the 11th.

The autopsy showed the primary carcinoma to be in the stomach, at the greater curvature, just eight centimetres from the cardiac orifice. The liver was enormously enlarged and weighed five kilogrammes and a half. The prominent tumor in the upper umbilical region felt during life corresponded to a new growth in the left lobe of the liver, which formed a projecting knob ten by ten centimetres in extent. The entire organ was occupied with small and large secondary nodules, very little liver substance remaining. The bile ducts were not affected. There were secondary nodules of cancer in the pancreas.

The following case is of great interest from the local character of the tumor masses, which in the epigastric region were so prominent, soft, and fluctuating that the condition of abscess of the liver was suspected. It illustrates, too, the importance of obtaining a thorough history.

Case XXXV. *Sarcoma of the Liver; Two Prominent Tumor Masses in the Epigastric Region; Diagnosis of Abscess; Exploratory Laparotomy.*—E. K., aged nineteen years, seen September 6, 1892, with Dr. McGill. Condition on visit was as follows: The most extreme grade of emaciation, particularly of the face. The skin was bathed in perspiration; pulse, 104, of fair volume and good tension; respirations quiet; no fever.

On exposing the abdomen, the upper zone is distinctly full, and two tumor masses are visible in the middle line, the smaller and less prominent just below the ensiform, and the other, a larger hemispherical mass, bulges the thin, tense skin between the ensiform cartilage and the navel. Both rose and fell with the respiratory movements. No glandular enlargements were visible.

On palpation, the superficial tumor masses were not tender, nor were there any spots of special sensitiveness anywhere over the liver. The lower and larger mass was soft and appeared to be distinctly fluctuating. The upper tumor was not quite so soft, and fluctuation could not be obtained between the two. The apparent fluctuation was also recognized by Dr. Tiffany, who had seen the patient some days before. A distinct ridge, like the edge of the liver, could be felt two fingers' breadth above the navel and extended to the right, passing at the anterior axillary line beneath the costal margin, at which point there was a somewhat indistinct irregularity.

The liver dullness began on the midsternum opposite the sixth costal cartilage, and extended within two fingers' breadth of the navel. In the midaxillary line it was at the eighth rib and the dullness was not increased at the right infrascapular region.

The condition of the heart and lungs was negative. The digestion was good and he had been taking plenty of nourishment. Lately he had had occasional attacks of diarrhœa.

The history of the case was not very satisfactory. He had been a fairly healthy lad, but had some indefinite illness this summer, and had gone out to Colorado with a friend. He was there on a ranch, and seemed to be fairly well until about six weeks ago, though he had apparently been losing in weight. He became much worse after a long ride, and about three weeks ago his father was summoned and immediately went to Colorado and brought him home. Since his return the chief symptoms have been progressive weakness and loss of flesh. The liver was found to be enlarged, and the tumor masses above referred to have within the past ten days become very prominent. There have been no definite chills, though he has occasional chilly feelings. The temperature has on no occasion been elevated and not infrequently been subnormal. He has had heavy sweats, particularly during sleep. No history could be obtained of any attack like dysentery, though he has had looseness of the bowels from time to time.

The first glance at the emaciated form of the patient at once suggested a new growth, but the age, the quick onset, and more particularly the examination of the superficial tumor masses and their rapid increase in size, seemed to favor the existence of abscess. Suppurating hydatid tumor could not be definitely excluded, though the rapid course was against this idea; also the profound emaciation which, though rare, is occasionally present, as in the case of an Italian who came under my observation in Montreal.* I suggested the propriety of aspiration or of an exploratory incision, and this the next day Dr. Tiffany proceeded to do. I then learned for the first time that in May, 1891, more than eighteen months ago, the lad had had disease of one testis, which had been removed, and Dr. McGill states that on section it seemed to be in a sloughing condition. He had, however, bruised himself on his bicycle. This fact was of very special importance in the history of the case, as it seemed most likely that the liver condition was associated with the disease of the testis, and from the length of time which had elapsed since the removal of the organ it rather favored the idea that the condition was neoplasm. I must say, however, that the physical examination of the two tumor masses in the epigastrium led us all to expect fluid, and I should unhesitatingly have put in an aspirating needle with the expectation of withdrawing either pus or a clear fluid.

Dr. Tiffany made an incision four inches in length over the lower tumor and exposed a large hemispherical swelling in the left lobe of the liver. There were no adhesions; the superficial substance had a natural reddish-brown color, and puncture with the hypodermic needle withdrew nothing but blood. Dr. Tiffany inserted his fingers and examined the upper mass, which was a second soft enlargement, and on the under surface of the liver there were several others, leaving no question that there was a multiple new growth in the organ. The patient was extremely weak after the operation, but rallied for a few days.

In this case, as in one or two others which I can call to mind, I have been led astray by the deceptive, semi-fluctuating character of liver tumors.

Primary new growths in the liver in young men are, of course, extremely rare, and, taking all the circumstances of the case into account, it is more rational to suppose that the lad had a new growth in the testis, which was bruised by the bicycle, and it was this in an inflamed condition which Dr. McGill removed in May, 1891.

The presence of tumor masses on the liver is, then, one of the most distinctive features of cancer of the organ, more particularly of the secondary form, which constitutes so large a proportion of all cases. The primary lesion is to be looked for in the stomach, intestines, urogenital organs, or the breast. The new growths are scattered diffusely with large nodular masses on the surface or at the edge. The rounded margin and cup-shaped depression are pathognomonic of these secondary cancerous nodules. The irregular syphilitic liver could alone be confounded with it, but in this condition there is rarely progressive enlargement of the organ, and the general features of the case are those of cirrhosis of the liver.

Tumor masses, as a rule, are absent in the primary cancer of the organ and in the form known as cancer with cirrhosis, in both of which conditions the organ may be of normal size, or even somewhat reduced. Lastly, large, rapidly growing encephaloid or sarcomatous growths may, as in Case XXXV, produce prominent tumors evident beneath the skin in the epigastric region, and which may apparently fluctuate, due either to the very soft nature of the neoplasm, or in some instances to hæmorrhage.

A CLINICAL LECTURE ON EXOPHTHALMIC GOÎTRE

(GRAVES'S OR BASEDOW'S DISEASE).

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AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL;
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Gentlemen: We have this morning a patient whose case presents the well-marked features of a somewhat remarkable and not very common form of disease. The patient is M. R., unmarried, aged twenty-two years. She has no employment, but lives at home with her parents. She comes to us to-day to be treated for a cardiac affection which, we are informed, has troubled her for five or six years past. Palpitation and painful action of the heart are of every-day occurrence, and are increased by even moderate exercise or exertion. The patient also suffers from muscular weakness, a capricious appetite, and general debility. The trouble is not so severe as to keep her in bed, but she never feels as well as other girls. In reply to a question she states that she sweats considerably, but much more on one side of the face than on the other. An inspection of the patient's face reveals several facts of importance. She has a very anæmic aspect, the face and prolabia being bloodless; at the same time the skin is very dark—many shades darker than that of her mother who sits by her side. We are informed, however, that her father was a very dark-skinned man, which fact may account for our patient's peculiar complexion. Another feature of more interest is the singular appearance of the eyes. An unnaturally large area of the tunica albuginea is exposed, giving the patient a wild, staring appearance. A close inspection shows that the balls of the eyes protrude abnormally from the orbits, so much so as to cause some stretching of the lids in order to close them. You will also observe a defective co-ordination between the movements of the eyeballs and those of the lids. When the patient looks down or up, the lids do not closely follow the movements of the globes, but are raised or depressed one at a time and in a faltering or hesitating manner. The constant stretching of the lids is no doubt responsible for the well-defined œdematous line which you will notice along their margins. Gentle pressure over the closed eye is sufficient to restore the globe to its natural position, but removal of the pressure is at once followed by renewed protrusion. The sight is not affected, but the eyes tire very quickly. The patient states that she went to a dispensary to be treated for weak eyes about four years ago. The doctor gave her some drops to put into them, and soon after her friends began to notice their undue prominence. The oculist must therefore, in the opinion of the patient and her friends, shoulder the responsibility for this condition, which is about as reasonable as many other accusations laid at the doctor's door. A casual inspection of the patient's neck would give you the idea of simple local fatness, but a closer examination will show you that this appearance is confined to the region of the thyreoid gland. We find that both lobes of this body are very materially and uniformly enlarged. The body is quite soft and pulsation may be noticed in it. This enlargement, we are informed, commenced some time after the heart symptoms appeared. Its growth was very slow and was hardly noticed for several years. The patient does not think it is enlarging at all lately. We find the pulse beating at the rate of 98 per minute. It is rather weak and vibratile, and a brisk walk around the amphitheater raises it to 130 a minute. There are no signs of organic heart disease, but a remittent, humming sound is heard over the right internal jugular vein, just above the sterno-clavicular articulation.

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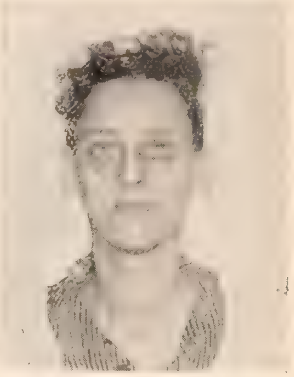
* *American Journal of the Medical Sciences*, October, 1882.

Among these subjective and objective symptomatic features there are three which point to a rational diagnosis of the case—viz., the exophthalmia or protrusion of the eyes, the thyreoid enlargement, and the quick heart. This clinical triad embraces the chief pathognomonic phenomena of a peculiar affection which has received the name of exophthalmic goître, after the two more prominent features. It is otherwise known as Graves's disease among English, French, and American writers, after Dr. Graves, who wrote the first succinct account of the disease as an individual affection in 1835; and as Basedow's disease among the Germans, after Professor Basedow, whose classical description appeared in 1840. These features are all very well marked in this young girl, and we need feel no doubt as to the identity of the affection. As corroborative symptoms we have the appearances of anæmia and also of hemidrosis (unilateral sweating). The exact pathology of this disease is still open to doubt, but it is believed to involve the vaso-motor and sympathetic nervous systems. In a few instances where autopsical examinations have been possible the cervical sympathetic nerves have shown morbid appearances, but in the majority of cases they were found to be unaffected. The affection does not seem to involve structural lesions, and may therefore be properly classed as a neurosis. The protuberance of the eyeballs may be partially due to an increase in the post orbital adipose and areolar tissue, but it is probably to a much greater extent caused by an enlargement of the blood-vessels in this locality. Vascular engorgement is also responsible for the thyreoid enlargement, supplemented later along by hypertrophy of the fibroid structure of the gland. No satisfactory reason has been assigned for the increased frequency of the heart's action. The anæmia, emaciation, and muscular weakness which are usually present may in some cases be responsible for this symptom, but cases occur in which these concomitants are absent. The disease occurs with vastly greater frequency in the female sex, probably in the proportion of 3 or 4 to 1, and is almost invariably found between the twentieth and fortieth years of life. Depressing emotions, fright, worry, and nerve shock have been supposed to have some influence in the causation, and heredity has also seemed to play a part in certain cases. Beyond this, speculations as to the ætiology are valueless, as we have no adequate data in the present state of our knowledge for determining the exact causation. With reference to the prognosis it may be said that the disease possesses no intrinsic tendency to destroy life, but it augments the danger of intercurrent affections. This young girl could hardly withstand an attack of pneumonia or typhoid fever, for example, as well as if she were free from Graves's disease.


Exophthalmic goître. Photograph by Mr. J. M. Dixon.

The affection is essentially chronic and extends over a long period of time. This patient, according to her history, has already suffered six years from it. A few patients are eventually worn out and die from exhaustion, while others succumb to dilatation and enlargement of the heart, due to the constant acceleration. Still others, probably twenty-five or thirty per cent., overcome the debilitating effects of the disease and eventually recover. In a small proportion of the recoveries the exophthalmia may remain permanent, owing to paresis of the recti muscles from constant overstretching. Some enlargement of the thyreoid also occasionally persists, but in a majority of those who get well all traces of the disease disappear. Our present patient has certain indications in her favor—viz., a fair appetite and digestion and only a moderate degree of cachexia; nor is the heart's action excessively accelerated. In the therapeutics of exophthalmic goître we have no pathological entity to combat, hence there are no specifics for the affection. The treatment, therefore, resolves itself to a great extent into the management of the indications as they appear. In the case of this young girl the cardiac palpitation and the anæmia require immediate attention. The patient should be placed under the best attainable hygienic conditions. She should receive a bland and unstimulating but nutritious diet. Such articles as milk, meat juice, and soups should enter largely into the daily regimen, although solid food may be partaken of with proper avoidance of the danger of upsetting the weakened digestive power. Everything should be done to avoid depressing emotions and to preserve a cheerful frame of mind. Alcohol, tea, and coffee should be used sparingly if at all. The patient need not be confined to bed, but a considerable part of each day should be passed in an easy chair, or in a position requiring little muscular exertion, although a short time may be spent outdoors daily when the weather is agreeable. For the persistently painful heart's action in this case I would recommend a prescription composed as follows: ℞ Tinct. aconit. rad., nitroglycerin (cent. sol.), āā ♏j; ext. cacti grandiflor. (P. D. & Co.), ♏x; aquæ dest., q. s. ad f ʒ j. One dose to be taken three times daily—on rising, at noon, and at bedtime. For the anæmia I would advise a five-grain Blaud pill combined with a grain of quinine to be taken after each meal. One drachm of pure cod-liver oil may be taken at the same time if well borne. A soft, nicely fitting bandage applied over the eyes at bedtime will promote the patient's comfort during the night, and relieve the tension of the eyelids. It is said that such a bandage applied snugly to the neck will facilitate the diminution of the thyreoid enlargement, but I have had no personal experience in this direction. The use of the galvanic current has the sanction of a number of eminent authorities in the treatment of this disease, but its use must be persisted in for a long time in order to be of benefit.[*] A daily bath would probably be of advantage in this case, given after the method of Jaccoud. The water should be quite warm at first and gradually lowered with each succeeding bath until it is as cold as can be borne without shock. The baths should not be of more than twenty-five or thirty seconds' duration.

The Shadow Test.—A course of lectures, demonstrations, and clinical work on skiascopy, or the shadow test, will be given at the Philadelphia Polyclinic during the week beginning April 9th. This method of determining the refraction of the eye has for years been practiced as a part of the regular routine examination in that institution, and is there thought to be of greater practical value than the methods by the use of the ophthalmoscope or the ophthalmometer.

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[*] An elaborate paper on the electrical treatment of Graves's disease will be found in the *Lancet*, July 4 and 11, 1891. Mr. Cardew, the author, uses a weak continuous galvanic current (two to three milliampères), and has it applied for six minutes three times a day.

Original Communications.

THE TREATMENT OF DEVIATIONS OF THE NASAL SÆPTUM.[*]

By JOHN O. ROE, M. D.,
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THE predisposing and exciting cause of many chronic diseases of the air-passages is nasal obstruction, which results perhaps as often from deviations and excrescences of the nasal sæptum as from any other conditions. The frequency with which deviations occur is very great; in fact, they are so often found that Stoker[†] says he doubts if such a thing as a perfectly straight sæptum exists. The following statistics give some idea of the frequency of deviations of the sæptum:

Zuckerkandl[‡] found deviations in 37·8 per cent.—140 in 370 cases observed by him; Delavan,[*] in fifty per cent.; M. Mackenzie,[‖] in 76·9 per cent.—1,657 in 2,152 cases; Jarvis,[△] in eighty-one per cent.—81 in 100 cases; Sedziak,[◊] in 83·5 per cent.—167 in 200 cases; Simanovsky,[↓] in ninety-five per cent.—925 in 974 cases; P. Heymann,[↕] in 96·4 per cent.—241 in 250 cases; Von Klein,[⇞] in ninety-eight per cent.

Nearly all statistics collected upon this subject are defective since they fail to specify the location of the deflection. It is a fact, however, that two thirds of all cases of deviation are confined to the cartilaginous and to the anterior portion of the osseous part of the sæptum. This is illustrated in the statistics just cited. Zuckerkandl's observations were made from dry skulls in which he found but 37·8 per cent. of deviations, indicating that in these cases the deviation was confined to the osseous portion, whereas in observations made entirely upon the living subject, in which the cartilaginous portion is present, the percentages reach from fifty to ninety-eight.

Classification.—Various attempts at classification have been made in regard to the form of the deviations, and nearly every writer on this subject has a classification of his own. Thus Loewenberg[**] divides them, according to their situation and direction, into superior, inferior, horizontal, and vertical deviations; Jarvis,[††] into osseous, cartilaginous, and osseo-cartilaginous; Sedziak,[‡‡] into simple deviations to the right or left, and deviations with partial thickening; Stoker[*] considers the subject under the following heads:

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[*] Read before the American Laryngological Association at its fifteenth annual congress.

[†] *Deviations of the Nasal Sæptum*, London, 1888, p. 1.

[‡] *Anatomie der Nasenhöhle*, erstes Bd., S. 102, zweite Auflage, 1893.

[*] *Transactions of the American Laryngological Association*, 1887. New York, 1888, vol. ix, p. 202.

[‖] *Diseases of the Throat and Nose*, vol. ii, p. 433.

[△] *New York Medical Journal*, 1888, vol. xlviii, p. 13.

[◊] *Journal of Laryngology and Rhinology*, 1891, vol. v, p. 85.

[↓] *Vratch*, vol. xi, 1890, No. 37.

[↕] *Berliner klin. Woch.*, 1886, Bd. xxiii, S. 329.

[⇞] *Times and Register*, 1889, vol. xx, p. 699.

[**] *Zeitschrift für Ohrenheilkunde*, Wiesbaden, 1883, Bd. xiii, S. 1.

[††] *Loc. cit.*

[‡‡] *Journal of Laryngology and Rhinology*, vol. v, 1891, p. 89.

Angular, curved, sigmoid, dislocations (so called), spurs, adhesions, exostoses; Rosenthal[†] has divided deviations of the sæptum into six different classes:

1. Simple deflection without thickenings.
2. Deviations with thickenings or spurs.
3. Sigmoid deviations in vertical or anterio-posterior direction.
4. Sigmoid deviations of both kinds with spurs.
5. Cristæ, without deflection of the nasal sæptum.
6. Zigzag deviations.

The division of deviations into osseous, cartilaginous, and osseo-cartilaginous, as suggested by Jarvis, is by far the most natural method, and all attempts at further classification are necessarily futile, since the sæptum varies as much in its size, shape, and position as does the external contour of the nose or the face, and in no two cases are there found the same amount and kind of deviation. Sedziak's second division, consisting of deviations with partial thickenings, in the shape of spurs (spinæ, cristæ), is misleading. This is a condition of apparent deviation, but not a real one, for it is often the case that one nostril will be occluded by an osseous outgrowth or spur, whereas the sæptum on the opposite side may be straight. This condition is not treated as a deviation of the sæptum, and can not therefore be classed as such.

Treatment.—Before detailing the methods that I have found most efficient in the correction of deflections and deformities of the nasal sæptum, it may not prove uninteresting to review briefly and systematically the methods that have been from time to time proposed by others and found by them to be of the most service.

The treatment of deviations of the sæptum may be divided into palliative and radical.

Palliative treatment consists in the adoption of such measures as may remove the exciting cause—such as the removal of turbinated hypertrophy, or of an osseous growth of the turbinated body, or the removal of enlarged tonsils, adenoid growths, and such other conditions as may obstruct the nostril and interfere with proper development of the nose.

Radical treatment consists in the employment of measures by which the deviation is forcibly and more or less speedily corrected, and may be divided into (1) non-surgical and (2) surgical.

(1) *Non-surgical Treatment.*—Non-surgical methods are those by which the sæptum is forced to the proper position without the employment of cutting or lacerating instruments. They are efficacious mainly where the deflection is confined to the anterior or cartilaginous portion of the sæptum, and consist in the employment of pressure upon the convex side sufficient to force the sæptum back into the median line. This may be accomplished in two ways: by slowly forcing the sæptum back into place; or by forcing it into place at once and holding it there by means of a retentive apparatus. The former method was the one first proposed for the correction of deviation of the sæptum. This was brought forward by Quelmalz[*] a century and a half ago, and it was he who was the first to call attention to the importance of correcting deviated sæpta. His plan was to force it back into place by daily digital pressure, until the sæptum retained its normal position. Since his time this method has also been advocated by many others. Michel,[†] in 1876, recommended pressure in a similar manner upon the convex side of the deviated sæptum from fifty to a hundred times a day. In 1888 Boyer[‡] proposed the application of a bandage to the external portion of the nose sufficiently tight to modify the deformity. Massei,[#] Boucher,[‖] and Masucci[△] have proposed the employment of compressed air from the apparatus of Waldenburg for about five minutes several times a day. Dionizio[◊] suggests the introduction during the night of a gauze or cotton tampon into the nose, to exert a more or less continuous pressure after the employment of compressed air. The attempt to force the sæptum into the median line by the use of prepared sponges, metallic sounds, and the like, has been abandoned on account of the irritation they excite and the comparatively small amount of good accomplished.

Rapid dilatation of the occluded nostril and restoration of the sæptum may be accomplished by the use of dilating instruments, such as the nasal dilator figured and described by Woakes[‡] in 1883. The instrument proposed by Woakes is, however, of very slight power in comparison with the dilator proposed by Hewetson[‡] three or four years ago. Hewetson's instrument very much resembles a large steel glove stretcher, and was primarily devised for the treatment of nasal stenosis. This method has also been employed with success by Hill,[‡] Scanes-Spicer,[**] Lennox Browne,[††] and Orwin.[‡‡]

(2) *Surgical Treatment.*—The correction of deviation and deformities of the sæptum by surgical means may be accomplished by a variety of methods. They may be enumerated as follows:

1. By the use of forceps having flat parallel blades.
2. By removal of the prominent portion of the deflection with (*a*) knife, (*b*) chisel, (*c*) saw, (*d*) scissors, (*e*) files, burrs, drills, and gouges, (*f*) needle and snare, or (*g*) punches.
3. By the destruction of the prominent portion with caustics, electrolysis, or galvanic cautery.
4. By incising the sæptum with knife or cutting forceps.

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[*] *Deviations of the Nasal Sæptum*, p. 9.

[†] *Sur les déformations de la cloison du nez et leurs traitements chirurgicaux.* Thèse de Paris, 1888.

[*] *De Narium earumque sæpti incurvatione*, Lipsiæ, 1750.

[†] *Die Krankheiten der Nase*, Berlin, 1876.

[‡] Rosenthal. *Les déformations de la cloison du nez*, etc., Paris, 1888.

[#] *Patologia e terap. della faringe*, etc., Vallardi, Milano.

[‖] *Arch. ital. di laringologia*, 1888, viii, No. 1, p. 19.

[△] *Giorn. internaz. delle scienze mediche*, 1881, n. s., p. 160.

[◊] *Revue internationale de rhinologie*, etc., 1893, tome iii, p. 82.

[‡] *British Medical Journal*, 1890, vol. ii, pp. 620, 621.

[‡] *Ibid.* [‡] *Ibid.* [**] *Ibid.*

[††] *The Throat and Nose and their Diseases*, 3d ed., London, 1890, p. 590.

[‡‡] *British Medical Journal*, 1890, vol. ii, p. 621.

5. By the employment of pins.

6. By fracturing the sæptum by means of comminuting forceps.

1. *Forceps with Flat Blades.*—The method of correcting the deformity by means of forceps was first proposed by Adams,[*] of London. His well-known forceps is constructed with strong, flat blades, a blade being inserted in each nostril and sufficient pressure exerted to force the sæptum into place. The sæptum is then retained in its proper position by ivory plugs or steel plates, held by screws, until the cure is complete. Too great pressure must be carefully avoided, while frequent cleansing is also needed. After a time the ivory plugs may be replaced by plugs made of wadding or oakum. Jurasz [†] modified this method by employing forceps with detachable handles, so that the blades of the forceps could be left *in situ* after making the correction, and held firmly in place by means of screws. This method of procedure has been still further modified by Delstanche,[‡] who has the blades of the forceps covered with rubber. Hope,[#] of New York, has devised a forceps to be used in connection with the Adams forceps in the operation for the refracture of the sæptum. By the action of one blade carrying a steel pin, which is received into a corresponding circular opening in the opposite blade, the sæptum is pierced with a line of punctures drawn at a sufficient interdistance to map out a direction of fracture in exact conformity with the intention of the operator; and, in completing the separation of the bony continuity with the Adams forceps, any extreme force ordinarily necessary is obviated. Garrigou-Desarènes [‖] has described an instrument devised by him for correction of deviated sæpta. The forceps is composed of two blades, with corresponding convexity and concavity, which are placed in each nostril; these two blades are tightened by a screw before the fracturing of the cartilage.

2. *Knife, Chisel, Saw, etc.*—Excision of the prominent portion of the deflected cartilage with a *knife*, so as to render the occluded nostril free, was first practiced by Dieffenbach [△] in 1845. This method is still employed by Geuzmer [◊] and many others. Heylen [‡] modified this method by first dissecting the mucous membrane carefully from the surface of the deformity, and then removing the prominent portion of the cartilage with scissors. Demarquay [‡] describes a still more complicated operation by which he opens the nasal cavity by an incision along the ridge of the nose, in the median line, in order to gain free access to the parts. The mucous membrane is then dissected from the prominences, which are removed with a knife. The membrane is then united over the part by sutures, the external wound being closed in the same manner. In anterior cartilaginous deviations Ingals,[*] of Chicago, has modified the methods of Dieffenbach and Heylen as follows: He makes first an oblique incision through the membrane of the convex portion of the prominence. The membrane is then detached a certain distance on each side of the cut from the underlying cartilage, thus exposing the latter. A V-shaped piece is then excised from the deflected cartilage, and the parts are brought together by sutures, the cartilage being pressed into line and supported by means of tampons. Similar means for the correction of the deformity have been adopted by Petersen,[†] Moldenhauer,[‡] Krieg,[#] and also by Post of New York, as quoted by Robinson.[‖]

Hartmann,[△] in 1884, was the first to make use of the *chisel* for the excision of the prominent portion of the sæptum. Heymann [◊] likewise employs an ordinary carpenter's chisel in removing the projecting portion, a method that has been adopted by Seiler.[‡] The chisels employed by Seiler are, however, very delicately constructed, being operated either by the hand or a small mallet.

The *saw* is especially adapted for the removal of osseous or cartilaginous spurs, usually found along the convex angle of the deflection, or occurring as inflammatory deposits along the line of junction of the different portions of the sæptum, or of the sæptum with the superior maxilla. Such deposits are often found when the sæptum is scarcely or not at all bent. The most ardent advocate of the saw is Bosworth.[‡] After giving Woakes and Seiler credit for previous use of the instrument in correcting nasal deformities, Bosworth thus describes the form of saw employed by him: "The blade is as thin as possible, consistent with strength, an eighth of an inch wide, five inches long, with a cutting edge of three inches, with thirty teeth to the inch, each tooth an exact equilateral triangle, with no cross-cut and no set to the teeth, the handle being three inches long, of sufficient size to be grasped by the hand, and attached to the blade at an angle of forty-five degrees, in order that the hand should in no way obstruct the view while operating. These saws are constructed in two forms, one with the cutting edge upward and the other with the cutting edge downward." Especially adapted for the removal of spurs and ridges from the sæptum are the small bow saws that I devised for intranasal work about four years ago and presented to this association in 1889.[‡] These saws, by reason of the blade being held firmly by a rigid bow, are superior to the ordinary nasal saw, in that the blade is not readily deflected from the straight line.

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[*] *British Medical Journal*, 1875, vol. ii, p. 421.

[†] *Berliner klinische Wochenschrift*, Bd. xix, 1882, S. 49.

[‡] *Annales des maladies de l'oreille*, etc., tome xi, 1885, p. 269.

[#] *Medical Record*, 1889, vol. xxxv, p. 111.

[‖] *Journal de médecine de Paris*, 3 février, 1889.

[△] *Die operative Chirurgie*, Bd. i, Leipsic, 1845.

[◊] *Revue de chirurgie*, No. 12, 1887.

[‡] *Ann. de la Soc. de méd. d'Anvers*, tome iv, 1847, p. 21.

[‡] *Gazette des hôpitaux*, 1859, p. 470.

[*] *Transactions of the American Laryngological Association*, 1882, vol. iv, p. 61.

[†] *Berliner klinische Wochenschrift*, Bd. xx, 1883, S. 329.

[‡] *Die Krankheiten der Nasenhöhle*, 1886.

[#] *Medicinisches Correspondenzblatt des würtembergischen ärztlichen Landesvereins*, 1886, Bd. lvi, S. 201, 209.

[‖] *Nasal Catarrh and Allied Affections*, 2d ed., New York, 1885, p. 189.

[△] *Bulletin de la Société de chirurgie de Paris*, tome x, 1884, p. 390.

[◊] *Berliner klinische Wochenschrift*, Bd. xxiii, 1886, S. 329.

[‡] *Medical Record*, 1888, vol. xxxiii, p. 182.

[‡] *Diseases of the Nose and Throat*, New York, 1889, vol. i, p. 303.

[‡] *Transactions of the American Laryngological Association*, 1889, p. 143.

One of the principal objections to Bosworth's pattern is that the slender blade is so flexible that, in holding the blade up against the sæptum on starting the saw, it is quite apt to be bent out of the straight line, and therefore in sawing describe a curve.

Scissors of different patterns have been devised by different operators for the removal of excrescences from the sæptum. The writer has for about twelve years used a pair of toothed or grapevine scissors, devised by himself, with the blades set at an obtuse angle to the handles, so that the view of the blades may not be obstructed by the hand. Especially constructed scissors have also been devised by Seiler,[*] Jarvis,[†] Sherwell,[‡] and Fraenkel.[#]

Sandmann[‖] makes use of *files* to remove osseous growths from the sæptum.

Burrs, similar to dental burrs, for the removal of excrescences from the sæptum, were, I believe, first employed by Goodwillie,[△] and afterward adopted by Seiler.[◊] These are operated by a dental engine or an electro-motor. Goodwillie has since devised a shield for the burr, to prevent injury to the soft parts. The nasal plane devised by Jarvis[‡] is simply a burr projecting slightly through a flat shield. By passing it over a rough surface, the inequalities are removed or planed off. The *drills* devised by Curtis[‡] are of special service in the removal of bony growths and exostoses. The only objection to their use that can be raised is the rough and irregular surface they may leave. In addition to the above-named surgeons, the trephine has as its advocates Bronner,[‡] J. Wright,[**] Astier,[††] and Lennox Browne.[‡‡] In most instances the use of drills is regarded as but preparatory for the easy admission of the nasal saw.

Wright[##] has proposed the plan of employing a nasal trepan for the purpose of making a hole from the anterior to the posterior end of the deviation, in such a manner that it goes as close to the mucous membrane on the opposite side as possible without perforating it. Into the resultant tunnel a saw is inserted and the exostosis is removed by sawing upward and downward from the opening made by the drill. This plan has also been adopted by Lennox Browne.[‖‖]

Gouges of various devices have been employed for the removal of sæptal projections and irregularities. To trim off portions of redundant cartilage, Weir[△△] employs a gouge forceps, mounted like a dressing forceps, and Jarvis[*] has for the same purpose devised his fenestrated cartilage forceps. For bony growths and ridges Jarvis uses his rongeur forceps. In order to avoid the destruction of the mucous membrane, Greville MacDonald[†] incises the muco perichondrium over the center of the bony ridge or growth to be removed with a small, especially constructed knife, and raises the periosteum with his spud or "raspatory." He then removes the bone with his flat, curved, or triangular gouges and replaces the flaps.

The method of removing the salient portion of the sæptum by means of *needle and snare*, proposed by Jarvis[‡] in 1882, may be briefly described as follows: The base of the cartilaginous projection is pierced with a transfixion needle until the point reappears. The wire loop of the écraseur is now passed over the point of the needle projecting into the nostril, and tightened around the transfixed tissue by forcing up the outer cannula with a movement of the finger against a milled nut. A few turns of the milled nut cause the wire to sever the engaged portion.

For the purpose of removing an angular portion of a deflection or a unilateral obstruction to respiration, *punches* of various forms have been devised, such as those by Blandin,[#] Rupprecht,[‖] Roser,[△] and Goodwillie. In all respects they resemble that first proposed by Blandin, which consists essentially of a modification of an ordinary shoe punch. Another variety of punch, or stellate blades, has been devised for the purpose of making incisions in the cartilage sufficient to overcome the resiliency. This idea is simply a modification of the plan adopted by Chassaignac,[◊] who dissected up the mucous membrane and then made a number of incisions through the deflected portion by means of a knife, which rendered the cartilage pliable, so that it could be maintained in a vertical position until it became solidified. The first device adopted for the accomplishment of this object by means of a punch was that used by Bolton.[‡] His instrument was similar to a buttonhole scissors, by which he was enabled to make incisions in different directions by changing the direction of the handles. Steele[‡] further modified this form of instrument by adopting a stellate punch, so that the operation is completed at one sitting.

3. *Caustics, Electrolysis, and Galvanic Cautery.*—Bresgen,[‡] in 1887, proposed for the correction of cartilaginous deviations the use of chromic acid, either in crystals or in concentrated solutions. Miot,[**] in 1888, was the first to make use of electrolysis to remedy thickenings or

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[*] *Diseases of the Throat*, Philadelphia, 1893, 4th ed., p. 339.

[†] *Medical Record*, vol. xxvii, 1885, p. 284.

[‡] *Ibid.*, vol. xxxi, 1887, p. 450.

[#] *Transactions of the International Medical Congress*, Berlin, 1890.

[‖] *Deutsche medicinische Wochenschrift*, Bd. xvii, 1891, S. 327.

[△] *Medical Record*, vol. xvi, 1879, p. 28.

[◊] *Op. cit.*, p. 334.

[‡] *Medical Record*, vol. xxxi, 1887, p. 408.

[‡] *Medical Journal*, vol. xlv, 1887, p. 596.

[‡] *Lancet*, London, 1890, vol. ii, p. 172.

[**] *Medical Record*, vol. xxxvii, 1890, p. 36.

[††] *Annales des maladies de l'oreille*, etc., tome xvii, 1891, p. 643.

[‡‡] *The Throat and Nose and their Diseases*, London, 1890, p. 588.

[##] *Op. cit.*

[‖‖] *Op. cit.*, pp. 594 *et seq.*

[△△] *Medical Record*, vol. xvii, 1880, p. 279.

[*] *Medical Record*, 1885, vol. xxvii, p. 284.

[†] *Diseases of the Nose and its Accessory Cavities*, London, 1892, 2d edition, p. 203.

[‡] *Transactions of the American Laryngological Association*, vol. iv, 1882, p. 69.

[#] *Compendium de chirurgie pratique*, tome iii, p. 33.

[‖] *Wiener medizinische Wochenschrift*, Bd. xviii, 1868, S. 1157.

[△] *Berliner klinische Wochenschrift*, 1880, Heft xvii, S. 649.

[◊] *Gazette des hôpitaux*, 1851, p. 420.

[‡] *Richmond Medical Journal*, vol. v, 1868, p. 241.

[‡] *St. Louis Courier of Medicine*, vol. i, 1879, p. 485.

[‡] *Wiener medizinische Presse*, Bd. xxviii, 1887, S. 237.

[**] *Internationales Centralblatt für Laryngologie, etc.*, Bd. v, 1888–'89, S. 531.

deviations of the sæptum. Garel,[*] Moure,[†] Botey,[‡] Tilly,[#] and Rosenthal [‖] have confirmed the good results obtained by Miot. Needles of steel or platinum are ordinarily used. Originally Miot connected the needles used with only the negative pole, but Moure and Bergonie [^] make use of both poles. This latter method has the advantage of being more rapid and less painful than the former. The action of electrolysis is due to the cauterization of the tissues by decomposition of the liquids, since, in proportion to the intensity of the current, acids are formed at the positive pole and alkalies at the negative. The use of the galvanic cautery, so warmly recommended by Voltolini,[◊] was first proposed by him in 1888. In deviations of the cartilaginous sæptum, by means of the galvanic cautery he removes enough of the prominent portion to make it possible to force the sæptum into place, for which purpose acids and electrolysis are likewise employed.

4. *Incision of the Sæptum.*—In the correction of deflections confined to the cartilaginous portion of the sæptum Asch [‡] employs, for incising the most prominent portion of the deflection, a pair of strong cartilage scissors similar to a pair of buttonhole scissors, or much like those employed by Bolton. He then forces the sæptum into place by Adams's forceps and holds it there until it has become firm by means of a triangular splint wound with absorbent cotton and dipped into a solution of bichloride of mercury, or by plates inserted on each side of the sæptum and controlled by ingeniously arranged screws. He gives the preference to the former. Asch also employs a hard-rubber tube, with numerous small perforations to afford drainage, to be worn for a considerable time until the parts are healed.

5. *Employment of Pins.*—In deflection of the cartilaginous portion of the sæptum, J. B. Roberts, [‡] of Philadelphia, makes use of pins for the purpose of holding the deflected portion in place after the resiliency of the sæptum is overcome by incising it with a knife. He makes a long incision through the sæptum, from back to front, along the line of deviation or projection. He then passes about two thirds of the length of a long steel pin through the sæptal cartilage of the normal nostril a short distance above and in front of the incision. Pressing the end of the nose and sæptum into proper position, he brings the head of the pin close to the anterior part of the sæptum, thus causing the portion lying in the occluded chamber to lie across the incision and adapt itself lengthwise along the surface of the sæptum beyond the incision. The pin is then pushed in to the head, and its point is thus deeply imbedded in the soft tissues of the sæptum and upper and posterior part of the occluded chamber. Two pins are often needed to correct the deformity. In such cases Roberts usually inserts the second one, not from the mucous surface within the nostril, but from the cutaneous surface of the dorsum of the nose just below the nasal bone. The pins are left in position two weeks. The operation, although possessing the advantage of simplicity and effectiveness, will be useless unless the incisions are very free, so as to take away all resiliency of the cartilage.

6. *Fracturing the Sæptum by Means of Comminuting Forceps.*—Two years ago (June, 1891) I presented for your consideration a new form of forceps for correcting deviations of the sæptum, which I had had constructed about a year before, and which I have used since that time with very great satisfaction. My forceps consists, as you know, of a male and female blade, the female blade being fenestrated and the male blade fitting into this fenestrum loosely so as not to cut the tissue on the employment of pressure.[*] The great difficulty attending the use of flat forceps, such as Adams's, is that it only partially corrects the deformity. It merely presses the sæptum up to the median line, and does not fracture it or sufficiently overcome the elasticity to prevent the sæptum from springing back to a greater or less degree after the pressure is removed.

Before undertaking the operation of correcting a deflected sæptum it is necessary to decide as to the advisability or necessity of the operation. Not all sæpta deflected from the median line require straightening, for the functions of the nose may not be sufficiently interfered with to require it. The first thing to determine is the amount of nasal obstruction, and whether each nostril is capable of admitting half of the normal respiratory current. One nostril may be sufficient to admit more than the normal amount of air required, or there may be sufficient space for respiration to be entirely carried on through that nostril; but the operation will be none the less required if the other nostril can not transmit half of the air respired. When no operation is necessary on account of nasal stenosis, it may, however, be necessary on account of pressure which may exist between the deflected portions and other parts of the nasal passage. In some instances nostrils obstructed by spurs, ridges, enchondromata, or exostoses of the sæptum will, when these are excised, be rendered sufficiently free for respiration, and at the same time all pressure will be removed. In such cases no operation for the moderate amount of deviation that may exist in the sæptum will be necessary.

Having determined the necessity of correcting the deviation of the sæptum, our first consideration is to place the cavity of the nostril—that is, the sæptum and the turbinated bodies on the concave side of the sæptum—in a normal condition. It is a common experience to find the turbinated body and also the turbinated bone very much hypertrophied so as nearly to fill the concavity, and in many instances so as to cause more or less stenosis of that side. Although in some instances not sufficiently enlarged to produce any obstruction of the nostril while widened by the deflection, they may none the less be large enough to completely obstruct the passage when the sæptum is placed in the median line. The removal of this condition of hypertrophy is therefore called for before the straightening of the sæptum is undertaken. On the convex side we frequently find spurs and exostoses, rendering the sæptum abnormally thick at the angle of deflection. These are also to be removed and the sæptum reduced as far as possible to its normal thickness before the straightening is attempted. It is not possible in all cases, however, to reduce the sæptum to its normal thickness before the operation. This is especially the case in sigmoid deflections. In such instances the angular projections have to be removed after the sæptum has been straightened.

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[*] *Transactions of the International Medical Congress*, Berlin, 1890.

[†] *Ibid.*

[‡] *Archiv. internac. de laringol., etc.*, Paris, tome ii, 1891, p. 41.

[#] *Thèse de Lyon*, novembre, 1890.

[‖] *Thèse de Paris*, 1888.

[^] *Journal of Laryngology and Rhinology*, 1890, vol. iv, p. 495.

[◊] *Die Krankheiten der Nase*, 1888.

[‡] *New York Medical Journal*, vol. lii, 1890, p. 675.

[‡] *Medical and Surgical Reporter*, Philadelphia, 1884, vol. li, p. 467.

[*] Since I published the description of my forceps, I notice that T. Smith has described a similar instrument, which is illustrated in the second edition of Greville MacDonald's *Diseases of the Nose*, London, 1892.

The fears entertained by many operators, and especially by the earlier operators, lest the laying bare of a considerable portion of the sæptum by the removal of spurs, ridges, exostoses, and enchondromata would lead to ulceration of the surface, because of the removal of so large a portion of the mucous membrane, are entirely groundless, for in no instance have I found a necrosis of the bone to take place, even after quite extensive destruction of the soft parts, so long as the soft parts covering the opposite side of the sæptum were intact. The sæptum receives quite sufficient nourishment from the nutrient vessels of one side to prevent any such result. This is true not only of the osseous portion, but also of the cartilaginous portion of the sæptum. The plan adopted by the earlier operators of turning back the mucous membrane and the perichondrium before the excision of the cartilage was entirely unnecessary, and the projecting angles of the cartilage can be sliced off with a knife *ad libitum*, so long as the wound is afterward maintained in an aseptic condition; the mucous membrane readily and kindly spreads over the denuded surfaces leaving no traces of the operation. One thing to be avoided, however, is destruction of the tissues with the galvanic cautery. This will almost always leave a mass of cicatricial tissue behind it, which will not be replaced by normal mucous membrane, but which will form a surface for the accumulation of dry crusts, secretions, etc.

The great desideratum in the correction of a deviated sæptum is to overcome all elasticity of the tissues that would tend to draw it back again. The failure of Adams's forceps and all similar forceps to meet this desideratum led me to devise these fenestrated forceps, by which we can not only bring the sæptum up to the median line, but can force the deflected portion past the center to overcorrect the deformity, so to speak, sufficiently far to overcome the elasticity and so break up the sæptum without laceration of the soft parts that it can be held in any position desired until the parts reunite and become thoroughly ossified. In the correction of deformities of the triangular cartilage in many instances, particularly if the cartilage is thick, it can be sufficiently comminuted to remain in place after having been held there for a length of time by a supporting dressing. In the majority of cases, however, it is advisable to overcome the elasticity of the cartilage by means of incisions at the most salient point, according to the extent of the deviation. These incisions may be made either with a bistoury or with cutting forceps, such as those proposed by Asch or by Steele. The latter instruments, however, cut entirely through the sæptum, and when the sæptum is forced over to the median line the cut surfaces frequently project somewhat irregularly and therefore present an uneven surface on healing. I have found it far better to cut through the cartilage from one side, leaving the mucous membrane of the opposite side intact so as to act as a splint to support the fragments. In order to accomplish this with the least liability of cutting through it, I have frequently employed a bistoury. By placing the finger in the opposite nostril one can detect the proximity of the knife to the finger, and by exercising due care can cut the cartilage entirely through in one or several directions, as desired, without cutting through the mucous membrane on the opposite side. To accomplish this in an easier and quicker manner, however, I have modified the cutting instrument of Steele by placing a set-screw between the blades so as to regulate the distance by which the blades are separated when the instrument is closed. The distance at which the blades are held apart can be very accurately regulated by this screw, so that the cartilage can be cut through without wounding the mucous membrane on the opposite side. It is advisable that the cutting of the cartilage be done from the convex side so that the retaining dressing which should be placed on that side may cover the wound, which can thereby be maintained in an aseptic condition, the opposite nostril requiring no dressing whatever. In those cases in which the cartilage is best held in place by Roberts's pins I adopt this method of making the incisions with the happiest results.

The employment of the punch for the removal of the angular portion of the cartilage I wish also most earnestly to condemn. By its use we simply cut away a deformity which we should correct, and leave a hole through the sæptum in which crusts and secretions constantly accumulate, thus becoming a lasting source of irritation.

In correcting deflections in the osseous or osseo-cartilaginous portion we must carefully determine the amount of bending the sæptum will require in order to force it into place. The blades of the forceps are then set by the screw in the shank so as to pass into each other sufficiently far to accomplish this object. The blades of the forceps, which are separable, are introduced separately, the female, or fenestrated, blade on the concave side, the male blade on the convex side. They are then locked, as in the case of an obstetrical forceps, and carefully forced together. Sometimes it may be necessary to make a slight rotary motion in order sufficiently to comminute the sæptum, but care must be exercised lest we thereby lacerate it. The instrument, as will be seen from the illustration (Fig. 1), may be used with a number of blades of different sizes that fit into the handle.* The blades should be selected according to the amount and kind of deviation. If deflection of the sæptum is greater in the vertical direction than the length of the blade which the aperture of the nostril will permit to enter, the blades can be separated and moved to one side and a wider portion of the sæptum grasped and broken down.

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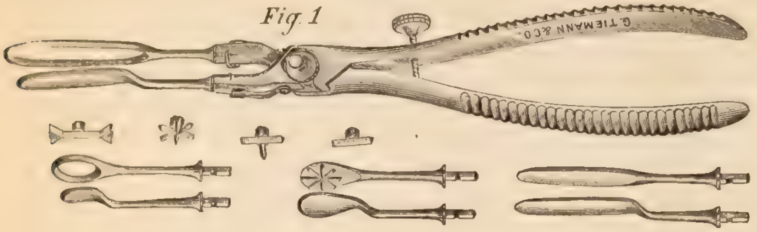
* But two pairs, the largest and the smallest blades, are represented in the cut. Fitting into the same handle are represented a pair of blades for Steele's cutting forceps, together with the smaller cutters that fit into the blades. A pair of blades of Adams's flat forceps are also added to the set. These also fit into the universal handle and are frequently found serviceable after the employment of the comminuting forceps. These instruments are made for me in a very superior manner by George Tiemann & Co., of New York city.

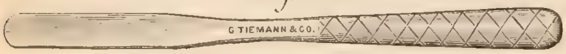
Fig. 1



In many cases a twenty-per-cent. solution of cocaine thoroughly applied will be sufficient to render the operation painless, especially with the use of a little chloroform just at the time of fracturing the sæptum. In instances where the patient is hyperæsthetic or nervous, and especially in cases where cocaine will not produce complete local anæsthesia, general anæsthesia is required.

After the operation has been performed, whether it be the incision of the cartilaginous portion or fracturing of the osseous portion, the sæptum should then be placed in the median line. I usually employ a small nasal spatula (Fig. 2) that I have devised for this purpose.

Fig. 2.



A variety of means has been employed for holding the sæptum in place after the operation, but the plan that I have found to give the most satisfaction to myself and cause the patient the least inconvenience and discomfort is the use of plugs made by wrapping wool or cotton around a small metal plate. The size of the plug can thus be adapted exactly to the size of the nostril and hold the sæptum in precisely the position desired. The size and shape of the nostrils vary so greatly in different persons that to have ready-made plugs adapted to each case the surgeon would be required to supply himself with a very large number of different sizes and shapes, whereas by this method this necessity can be easily obviated. Thus aside from the utility of the method, it becomes a matter of practical convenience. It matters little what metal is employed, for the reason that the cotton-cover protects it so thoroughly that it is impossible for the metal to come in contact with the tissue so as to produce any irritation whatever. The only inconvenience experienced by the patient is from the obstruction of the nostril; but this is of slight importance, for the reason that the other nostril remains free and unobstructed.

Before the introduction of this dressing every aseptic precaution should be taken. Previous to operating I usually cleanse the nostril thoroughly with a saline solution of bichloride of mercury, in the proportion of 1 to 5,000. After the operation the nostrils should be cleansed with the same solution, or it may be used a little stronger until the bleeding is arrested. It is very rarely that continued bleeding to any annoying extent occurs. When it does take place, however, it can be arrested by exerting pressure on the sæptum at the point where the bleeding takes place. After the hæmorrhage has ceased and the nostril has been thoroughly cleansed with this solution, the dressing is inserted. Before the dressing is introduced, iodoform is freely applied to the nostrils and the dressing dipped in a solution of bichloride of mercury, thus making the nostril as nearly aseptic as possible. The dressing may be left *in situ* for four or five days; at the expiration of that time it is generally necessary to change it. This can be done without any discomfort to the patient by the use of a small amount of chloroform. Again the nostril should be anæsthetized with cocaine, cleansed with the bichloride solution, and dusted with iodoform before reinserting the plugs.

It being necessary in many instances, as we all know, that the parts be held in position for a considerable time to insure their remaining in the proper place, I frequently instruct the patient, after the swelling and soreness have subsided and the soft parts are well healed, to make and insert for himself daily a fresh plug of the proper size. The introduction of the plugs is facilitated by smearing them with carbolized vaseline, which by this time is ordinarily all that is required in the way of an aseptic. The nostril is to be cleansed thoroughly, of course, each time the plug is changed.

The variety of conditions that we meet in the correction of all forms of deviated sæpta makes it impossible to adopt any one method to the exclusion of others. But I can unhesitatingly say that in all operations for correcting deviations of the osseous and osseo-cartilaginous portions of the sæptum the method of correcting the deformity by fracturing the sæptum with my comminuting forceps, with the method which I have described of holding the sæptum in place after the operation, has been in my hands superior to all other methods and has been attended with most excellent results.

CŒLIOTOMY FOR BILATERAL PYOSALPINX,

FOLLOWED FOUR DAYS LATER BY APPENDICITIS.

OPERATION. RECOVERY.[*]

By FREDERICK HOLME WIGGIN, M. D.,

PRESIDENT OF THE SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL;
SURGEON TO THE CITY HOSPITAL, GYNÆCOLOGICAL DIVISION.

A. D., nineteen years of age, an unmarried woman, was admitted to the uterine service of the City Hospital in November, 1893. The family history was bad. The patient began to menstruate at twelve years of age; it was of the regular monthly type. She had pain at the beginning of the period, which ceased when the flow was established. She was delivered in August at the Maternity Hospital. Regarding her present trouble, she stated that she had had severe abdominal pains with marked tenderness over both ovaries, associated with backache and headache. Her temperature ranged from 101° to 102°. Examination *per vaginam* revealed an enlarged and tender uterus, retroplaced and fixed; also a laceration of the cervix. Both tubes were enlarged, especially the left. A diagnosis was made of endometritis and double pyosalpinx, and curetting and cœliotomy for removal of the diseased tubes were advised. On November 27th, her general condition having improved, and her temperature having fallen to 99·5°, the operation was performed. The uterus was first curetted and packed with iodoform gauze, after which the abdomen was opened. The uterus and tubes were found firmly bound down by strong adhesions, the breaking up of which caused very free hæmorrhage, which was controlled, after removal of both tubes and ovaries, by the liberal use of hydrogen dioxide. Both tubes were found to contain pus. The ovaries were degenerated and cystic. The abdominal cavity was filled with hot salt solution (0·6 per cent.) and the wound closed without drainage. The patient did well, had little nausea, and took nourishment; the bowels moved satisfactorily, and the temperature ranged from 99° to 100·4° from the time of the operation till December 1st, when she had a chill, and a rise of temperature to 104°. Her pulse rose to 160 at this time, and she complained of pain in the abdomen, and was restless and irritable, and had nausea and diarrhœa. The wound showed no sign of infection, and had closed by primary intention. Five grains of acetanilide and one grain of citrate of caffeine reduced the temperature to 101·2°; the nausea passed off and the patient had a good night. On December 2d there was marked tenderness and pain over the appendix. There was still no appearance of infection of the wound, but to make sure of this the sutures were removed. No pus was found, and examination *per vaginam* was negative. The temperature varied from 100·6° to 103°, the pulse from 140 to 180, and the diarrhœa continued. Her condition was the same on December 4th—the temperature, 101° to 102·8°; pulse, 126 to 140. The following day she had incontinence of urine and fæces; the temperature was 101·4° to 103·8°, and the pulse 124 to 142; there was also marked tympanites. On December 6th, as the patient was going from bad to worse, and tenderness and fullness on the right side were more marked, it was determined to open the abdominal cavity over the site of the appendix. The patient was anæsthetized and the peritonæum opened, when five or six ounces of fœtid pus escaped at once. Examination showed the abscess cavity to be shut off from the general cavity by adhesions, which were not disturbed. The cavity was washed out with hydrogen dioxide and lightly packed with iodoform gauze. There was no connection between the abscess and the original incision. Eight hours after the operation her temperature had fallen to 99·4°, and the pulse to 128. The next day she was doing well. The abscess was washed out with hydrogen dioxide and an iodoform-gauze drain inserted, and this treatment was continued daily till December 10th, when, as there was no pus, the drain was omitted and the cavity was allowed to collapse, the wound being gradually drawn together by adhesive strips. It was noted on December 20th that the patient was rapidly gaining in strength, and that the cicatrization of the wound was nearly complete.

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[*] Read before the Society of the Alumni of Bellevue Hospital, February 7, 1894.

This case teaches the folly of delaying reopening the abdominal cavity if a cœliotomy is followed by evidence of septic infection, because we may be afraid that the infection is general and that the operation is therefore almost hopeless. In the second place, it shows that we should not be deterred because the patient's general condition is bad. In the case just reported the operation should have been performed four days before it was, but the pulse of 180 made me hesitate, as I was afraid that the patient would not bear the anæsthetic. With the patient's condition not improved by the delay, the anæsthesia, which lasted only ten minutes, was well borne, her pulse improving while under its influence, and her hopeless condition was relieved by my finding and removing the cause of her sepsis. It is reasonable to believe that in breaking up the adhesions in the primary cœliotomy, the appendix had been injured, and that this may be oftener the cause of sepsis after these operations than we are at present aware. It is not uncommon to find in the dead-house or dissecting room the appendix adherent to the right ovary.

In conclusion, I hope that this case will lead others to have the courage of their convictions.

55 West Thirty-sixth Street.

CIRCUMCISION.

THE LAST FIFTY OF A SERIES OF TWO HUNDRED CIRCUMCISIONS

By B. MERRILL RICKETTS, M. D.,
CINCINNATI.

On February 9, 1892, I read a paper before the Cincinnati Medical Society the title of which was One Hundred and Fifty Circumcisions and the Lessons they Teach. Since that time I have done an additional fifty, for various causes, in persons from eighteen months to forty years of age. Thus I am now like David coming before Saul with the captured Philistines: "I could bring, had I preserved them, two hundred prepuces as evidence of my attack upon the Christians." I do not care to recapitulate or make any special quotations from that paper, as my object is to speak directly upon a few advantages I have found in making the operation during the last two years.

In that paper I condemned the use of scissors in work of this kind. I wish to say that I was not familiar with the use of shears. The advantages that shears have over scissors is in their firmness. They do not yield in the least, and if sharp will cut the skin smoothly, without injury sufficient to prevent primary union. The shears that I use are the ordinary nickel-plated tailor's shears, with blades eight inches long and an inch wide, tapering down to a point. They are to be used after the prepuce has been transfixed and divided upon the dorsum, after the method of Cloquet. The skin upon either side is held and pulled up with two forceps, while the skin is divided from above downward with one stroke of the shears. If there should be any small points of cellular tissue to be removed, it can easily be done with the shears alone. A suture of catgut is taken through the upper and under skins upon the dorsum at the point where the skin has been transfixed, a double knot is made, and one end left about three inches long. A continuous suture is made down upon the left side under the frenum and up the right side, where the two ends are connected. This is done after the bleeding has been checked by hot water or pressure; when there is no bleeding a piece of cheese cloth about five inches square and of several thicknesses, with a small hole in its center to allow of urination, is wrapped about the organ and made secure with a soft cotton string. Ordinarily this dressing does not have to be changed until union is completed, unless the patient should be careless and cause it to become soiled. The beauty of this dressing is that it is not inconvenient, and does not very often require changing. The catgut sutures become soft and disorganized, so that it is never necessary to remove them. I have found that it is not necessary to use any kind of an anæsthetic where the prepuce is short, requiring nothing more than the median incision. I have thoroughly demonstrated that a number of boys from eight to fifteen years of age can have this incision made with but slight pain. This is done by carefully inserting a knife to the point of transfixion, at the same time diverting the mind and making the incision with one quick stroke. This once done, there is only a slight burning sensation, which amounts to but little. With children under three years of age it is best to make a circumcision as rapidly as possible without the use of any kind of an anæsthetic. Wounds made in tissue that has been anæsthetized by the subcutaneous injection of cocaine or the local application of rhigolene, ether, chloroform, menthol, or anything of the kind do not heal so rapidly as when made without their use. In cases where there is an adherent prepuce, a local application of cocaine will relieve the pain from the abraded surface, but will not prevent the pain—I mean when not used subcutaneously; therefore I would most earnestly advise that this and the other minor operations in children under three years of age be done without subjecting them to the risks of either ether, chloroform, or any of the local anæsthetics. These are the advantages that are to be obtained from doing circumcisions in early childhood. Then, too, in the majority of cases of long prepuce, if the median incision is made early in childhood, the absorption of the flaps by the time the patient becomes twenty years of age has been almost enough to obliterate them—that is, a short prepuce at the age of twenty, rendering the removal of the flaps necessary, can be avoided if a median incision is made upon that person during infancy.

In children where the prepuce is short and nothing but the median incision is required, it is not necessary to use any kind of a suture, otherwise ether or chloroform would have to be employed. Then, too, I have found in cases of short prepuce at the time of birth that if the adhesions are broken up and the prepuce is frequently retracted, there is a small percentage of cases that will not require any kind of surgical interference at the age of puberty. Thus the glans is not always covered at the time of puberty by a prepuce which barely covered it in infancy.

As to the use of silkworm gut, that is the most advantageous material to use, if the patient can be under the operator's constant supervision. There is no possibility of the wound being infected from such material, and I would urge its use where anything but catgut is to be used. Occasionally we are called upon to operate when we are not to see the patient again; under these circumstances the catgut suture would be preferable; but where there is any doubt as to the quality of the catgut, certainly silkworm gut should be given the preference.

The indications for the operation are local and systemic:

Local Indications.

1. Hygienic.
2. Phimosis.
3. Paraphimosis.
4. Redundancy.
5. Adhesions.
6. Papillomata.
7. Eczema $\left\{\begin{array}{l}\text{acute.}\\ \text{chronic.}\end{array}\right.$
8. Œdema.
9. Chancre.
10. Chancroid.
11. Cicatrices.
12. Inflammatory thickening.
13. Elephantiasis.
14. Nævus.
15. Epithelioma.
16. Gangrene.
17. Tuberculosis.
18. Preputial calculi.

a. Hip-joint disease.
b. Hernia.

Systemic Indications.

1. Onanism.
2. Seminal emissions.
3. Enuresis.
4. Dysuria.
5. Retention.
6. General nervousness.
7. Impotence.
8. Convulsions.
9. Hystero-epilepsy.

In conclusion, I would say that, so far as I have been able to determine, there has been but one person of the two hundred upon whom I have operated who has regretted having had the operation of circumcision done.

"The Trinidad," 137 Broadway, Cincinnati.

AN ANTISEPTIC POWDER.

By ALBERT PICK, M. D.,
BOSTON.
MEMBER OF THE MASSACHUSETTS MEDICAL SOCIETY, ETC.

The number of the *Journal* of January 27, 1894, published a formula of an antiseptic powder used by Lucas-Championnière, of Paris (France). It is really more a deodorized iodoform preparation than an efficient antiseptic powder, as the antiseptic properties of iodoform have been proved to be very doubtful.

In connection with the above I take the liberty to publish a formula of an antiseptic powder which I have been in the habit of using, with very satisfactory results, wherever usually iodoform is employed. The formula consists:

℞	Hydrargyri chlorid. corros.....	gr. $\frac{1}{5}$ (or gr. $\frac{1}{3}$);
	Acidi boric....................	℥ j;
	Acidi tannici..................	gr. x;
	Sacch. lact............ q. s. ad	℥ ij.

M. Sig.: Antiseptic powder.

A fifth of a grain of corrosive sublimate in this mixture gives a powder of the strength of 1 to 5,000, and a third of a grain, 1 to 3,000.

In preparing this powder care must be taken by the druggist to mix the sublimate very gradually and thoroughly with the sugar of milk, and then to add gradually the other ingredients, so as to be certain to obtain a uniform distribution of the bichloride in the mixture.

This mixture gives a more reliable antiseptic powder than any iodoform preparation and has no odor whatever.

Its strength is either 1 to 5,000 or 1 to 3,000 of corrosive sublimate, and if even a whole ounce of it (1 to 5,000) should be used at one time, which of course will never happen, only a tenth of a grain of sublimate would come in contact with the dusted surface. If even one fourth of this be absorbed (one fortieth of a grain) in an adult, no harm can result. If a small quantity is used it may be employed with perfect safety in the strength of 1 to 3,000 or 1 to 4,000 (an eighth or a sixth of a grain of sublimate to the ounce of the other ingredients).

Its untoward action, as regards intoxication, is, therefore, not more objectionable than that of iodoform, while its advantages over the latter are many. The boric acid and sugar of milk used as vehicles are both mechanically protective as well as antiseptic. The sugar of milk also prevents the deterioration of the bichloride. The tannic acid may be omitted whenever its desiccating or styptic action is not wanted.

I trust that some of my esteemed *confrères* who have an opportunity to try it extensively in surgical practice will do so, and let us hear about the results.

737 Tremont Street.

STRICTURE OF THE ŒSOPHAGUS.

DIVISION AND DILATATION AFTER GASTROSTOMY AND ŒSOPHAGOTOMY. TESTIMONY AS TO THE VALUE OF ABBE'S STRING METHOD OF DIVISION.

By W. J. MAYO, M. D.,
ROCHESTER, MINN.,
PRESIDENT OF THE MINNESOTA STATE MEDICAL SOCIETY;
MEMBER OF THE STATE BOARD OF HEALTH; SURGEON TO ST. MARY'S HOSPITAL.

H. W., aged three years, Amboy, Minn. Admitted to St. Mary's Hospital, Rochester, Minn., on October 5, 1892, with the following history given by her mother: One year previously the child accidentally swallowed caustic lye. For four weeks she was very sick, then gradually improved for several months, although totally unable to swallow solid food at any time. During the last six months she has had great difficulty in swallowing liquids, and has regurgitated from the œsophagus more than half of the nourishment taken.

Examination.—She is now emaciated to a considerable degree. Upon being given two ounces of milk it was drank with avidity, but nearly all of it was regurgitated. The dilated œsophagus above the stricture holds over four ounces of fluids. Bougies were inserted through the pharynx into the œsophagus, but were completely arrested at its lower end, while careful search of the face of the stricture with a number of whalebone bougies, under anæsthesia, failed to pass the stenosed portion. At intervals of four days this search was continued, but without result. While undergoing these repeated examinations the child became much better and able to retain a larger proportion of liquid nourishment, and improved visibly. Proper manipulation was much interfered with by the short, sharp curve of a child's pharynx and its small size; therefore external œsophagotomy was urged upon the parents to permit of more direct access to the parts involved. This was declined, and the little girl was taken home at the end of two weeks.

On July 19, 1893, the child was readmitted to the hospital. The slight improvement had been of short duration, a gradual closing of the small channel had taken place, and for the past four weeks it had been nearly if not quite impermeable, so that the little patient had been nourished entirely by rectal enemata. She was emaciated to a most marked degree. Careful search, as before, utterly failed to pass the stricture. External œsophagotomy, with the hope of finding a way through the damaged œsophagus, did not promise the rapid relief that the child's nutrition demanded; therefore, on July 20, 1893, in the presence of Dr. Daniels, Dr. Stinchfield, and others, I performed gastrostomy after the method of Fenger, the incision being made as high up and as close to the median line as possible, to permit of retrograde dilatation. This method was chosen as permitting more direct and easy access to the cardiac orifice of the stomach in place of that of Hacker or that of von Witzel, which are far superior as to the preventing of leaking from the fistula, but also present greater obstruction to intragastric manipulation. The child was now well nourished through the gastric fistula, and twice a week the lower face of the stricture, which was at the diaphragmatic opening, was carefully searched for an outlet. On two occasions the finger was introduced through the fistula into the stomach and used as a guide for the probe, the patient being anæsthetized. The dilatation of the fistula necessary to introduce the finger in so small a subject greatly increased the leakage through the gastric opening, and the child again began to fail from the inability of the stomach to retain nourishment.

On August 25, 1893, in the presence of Dr. Linton, Dr. Phelps, and others, left external œsophagotomy, at a low point in the neck, was performed by my brother, Dr. C. H. Mayo, and a bougie introduced by him through this opening and pressed against the stricture, pushing it downward into the stomach and holding it steadily. With a finger in the stomach, careful search now enabled me to pass a long malleable German-silver probe from the stomach through the stricture and out of the œsophageal fistula in the neck, and a heavy double strand of braided silk was drawn through the channel, having an end out of the opening in the œsophagus and also out of the gastric fistula. The stricture was about three quarters of an inch in length, as nearly as could be ascertained. By using one strand to cut the tissues, after the method recommended by Dr. Robert Abbe, while knots were tied on the second strand and pulled into the obstruction to keep the stricture tense, the opening was greatly enlarged. This method of Abbe's was of the greatest value, and had but one disadvantage—that of cutting the edge of the gastric fistula when drawn taut. This was in part obviated by holding the lower end of the cutting thread in the bite of a forceps held on a plane with the stricture from within the stomach. Knots on the second thread, to render the strictures tense, were equally good and easier of execution than pushing bougies from below into the small opening, as recommended by Abbe. During the succeeding month, at intervals of four days, this process of division was carried on, and perforated shot clamped upon the thread were drawn through to assist in the dilatation, as they readily followed the tortuous passage. Bougies then became permissible, inserted first from the neck and later through the mouth. In five weeks the threads were removed and dilatation was carried on with olive-tipped whalebone bougies made for the purpose. A sister of the little patient was taught to pass the probes, and the child was discharged in two months in a good general condition and able to drink milk readily and to take chopped meat and bread with but little effort. The œsophageal fistula had spontaneously closed, and the gastric opening, after being touched with the Paquelin, was nearly cicatrized.

The New York Polyclinic.—At the request of the class, Professor Edward R. Palmer, of the University of Louisville, lectured at the Polyclinic on March 29th on The Sexual Relation.

A BRAIN CYST,

THE RESULT OF INJURY, CAUSING APHASIA, HEMIPLEGIA, ETC. *EVACUATION: COMPLETE RECOVERY.*

By C. H. MAYO, M. D.,
ROCHESTER, MINN.,
SURGEON TO ST. MARY'S HOSPITAL;
MEMBER OF THE MINNESOTA ACADEMY OF MEDICINE.

On June 30, 1893, Miss O. S., aged eleven years, was thrown from a wagon in a runaway. The child was picked up unconscious, bleeding freely from the nose, and while being carried to the house had a severe vomiting spell. There was a small scalp wound on the anterior part of the left parietal bone, while about the right eye, cheek, and temple there were extensive ecchymosis and swelling. Consciousness not returning, she was nourished the first week by rectal enemata; from the second week on she was able to swallow small quantities of liquid nourishment. There was complete right hemiplegia; the eyes were fixed in an upward direction, the left pupil being the more dilated. On the fifth day there were twenty-five convulsions, and these were continued for a week, becoming less frequent each day. She remained in a comatose condition for about six weeks, when she apparently began to notice things with her eyes. Urination and defecation were involuntary following her injury. In this condition and emaciated to a skeleton she was referred to my care by Dr. O. Way, of Claremont. Her symptoms were indicative of a severe lesion about the left fissure of Rolando extending down over the speech center. On August 18th I operated upon the patient at St. Mary's Hospital, Dr. A. F. Kilbourne, of the Second Minnesota Hospital, Dr. O. Way, of Claremont, and others being present. The skull was opened by the trephine and rongeur forceps, exposing an area two inches by an inch over the left fissure of Rolando. The dura bulged into the opening and did not pulsate until a considerable area of bone was removed. On incising the dura, four ounces of a clear watery fluid were discharged, and upon opening up the dura freely the whole left frontal lobe was seen depressed; at the region of the Rolandic area this depression was over an inch from the skull. The fluid was between the arachnoid and the dura. The cerebral tissue expanded to but a slight degree, leaving a large cavity. There was no sign of fracture in this region or beneath the scalp wound, although the dura was closely adherent to the skull. Catgut strands were placed so as to project into the cavity and extend out of the scalp wound, and the membrane was closely sutured with the same. The scalp wound was then closed with interrupted sutures of silkworm gut without reimplanting the bone chips. Her appearance was much better the day following the operation and her recovery was very rapid. At the end of the first week she could say "No" and "Yes," and those were the first articulate sounds she had made since the accident. She could also move the right arm and leg. Words came slowly and hesitatingly but correctly, and after three weeks she was able to sit up and call for food, naming the different articles wanted. Four weeks subsequent to the operation she was discharged from the hospital, and three weeks later she was able to walk across the room alone and talk quite freely. She has no recollection of events from the date of the accident to that of the operation, and but little during the week following. The condition was probably one of degenerative cyst resulting from the severe injury. Chloroform anæsthesia was employed.

Note.—A letter from her mother received December 20th says that the child plays about with other children and that she considers her perfectly recovered.

THE USE OF ANTIPHONES.

By E. W. SCRIPTURE, Ph. D.,
YALE UNIVERSITY.

Sensory irritability during sleep often seriously interferes with the sleep and work of the patient without being considered worthy of inquiry or treatment by the physician. Especially noteworthy is the fact that the use of antiphones is almost unknown, although so many individuals are constantly disturbed by noises in the house, traffic in the streets, and the clock bells on churches. Four years of experience have proved my ability to obtain sound sleep by means of antiphones, whereas before their use (and now at any time when they are omitted) comparatively little sleep was to be obtained. After trying various substances, I was led to using antiphones made of sealing wax in the following way: The stick of wax is warmed over the gas flame, and a sufficient quantity is pressed off between the thumb and finger. This is placed in the entrance to the external meatus. In order to make such a fit that no sensations of touch are produced when the head is placed on the pillow, the tragus is pressed over it for an instant, and the end of the index finger slightly loosens the top and the bottom of the plug in the ear. Each morning the antiphones are thrown away.

The selection of the wax is a vital matter. If the wax melts at a high point, it will burn the fingers and the ear; if it passes from solid to liquid without a viscous stage, it can not be molded; if it is too hard, it will cause pain in the ear; if too soft, it will seize the fine hairs and pull them out. Numerous trials have led me to select Dennison's Am. Expr., No. 2, while in America, and Packet-Lack in Germany (American package-wax is seldom viscous). The subjective noises may disturb the patient on the first occasion, but they will soon become unconscious.

A CASE OF FRACTURED RIB AS A RESULT OF A FIT OF VIOLENT COUGHING.

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VISITING SURGEON TO CHARITY HOSPITAL, NEW ORLEANS;
CHIEF OF CLINIC, CHAIR OF SURGERY, TULANE MEDICAL COLLEGE;
FELLOW OF THE SOUTHERN SURGICAL AND GYNÆCOLOGICAL SOCIETY.

About ten days since I was called suddenly to an old man whom I had been treating for some time for a severe chronic bronchitis. Upon my arrival, I was informed that during a severe paroxysm of coughing he had felt something snap on his right side; upon examination I found a complete fracture of the ninth rib in the axillary line.

The patient is a German, aged about seventy-two years, and from the extreme brittleness of this bone it might be in truth termed "a pipestem rib."

I find in looking over the literature that such cases of fracture are extremely rare—in fact, I can find no case resembling mine exactly. I have therefore considered it of sufficient interest to report to the profession.

145 Canal Street.

The Death of Dr. Brown-Sequard.—It is announced that Dr. Charles Edouard Brown-Séquard, the noted Paris physician and physiologist, died on Monday, the 2d inst., at the age of seventy-seven.

THE
NEW YORK MEDICAL JOURNAL,
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Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, APRIL 7, 1894.

IN THE WAKE OF THE GRIPPE.

Four years of pandemic, of invasion by a hydra-headed plague, of subjection to the assaults of one of the most intense nerve-poisons known to mankind, and in what state of vigor does the community find itself? That many old hulks have foundered in the storm, that many ill-built barks have been towed with difficulty into port, is evident to all. But what of the gallant ships which, stanch and buoyant, bravely rode out the gale? Are they the worse for the contest, or are they as trig and strong as ever to meet again the vicissitudes of life's troubled sea? That the marks of the ravages of influenza will remain throughout life in persons who have no organic disease we can not believe. There is every reason to suppose that influenza itself is a self-limited disease; that, unless speedily destroyed by its subtle poison, the well-balanced human organism will in time either expel or destroy the invading "influence." The influenza poison seems to be incapable in itself of working deep-seated organic changes in the tissues. It produces grave disaster, on the one hand, by disarranging through overwhelming assault the nerve functions which operate the heart and lungs; on the other hand, by giving occasion to the development of other diseases which would not else have found lodgment in the body. But that the nerve-force of the community has been left temporarily below par by the departing pandemic may be very reasonably suspected. How else can we explain the tale of numerous ununited, and apparently ununitable, fractures which are told us by the surgeon? How else may we account for the protracted neurasthenia of men and women formerly vigorous, or for the strange inco-ordination between pulse, temperature, and respiration rates observed in obstetrics and in general medicine? May we not so interpret the absence of a new fad in medicine during the past winter—indicating that even the medical crank has lost the energy to advertise himself? And has there not been a falling off in the usual number of excised ovaries exhibited before the medical societies, by which the young and confident gynæcologist was wont in former years to prove his title to chieftainship? Can it be that the remover of "appendages" has lost his nerve? Or has some vague feeling of timidity entered the confiding heart of womankind?

Unabashed, the "orificial surgeon" pursues his daily round of "operations," cutting off rectal tags for fabulous sums of gold, stretching all the sphincters within reach ("all-round work" he calls it) for every imaginable disorder of every existing organ of the body, and winding up obstinate patients with the "great American operation," the details of which he disdains to expose to uninitiated readers of his fables. One fact, it is true, he seems to have unearthed—that an unconscious man may be stimulated to inspiration and kept breathing by repeated sudden stretchings of the anal sphincter. We desire to give even the "orificialist" his due, but this lonely fact was unearthed before the influenza depression of which we are speaking had reached its greatest intensity. Looking beyond the bounds of medicine, may we not discover in the economic world signs of deficiency of nerve-tone? Does not the strange and hitherto unexplained wave of distrust which still depresses the financial operations of civilized nations suggest a want of nervous force, a widespread lack of self-confidence among men? And is not this deficiency betrayed also in the sluggishness which our legislators manifest in facing problems of vital interest to their constituents? Surely "the world is out of joint" for the time being, and audacious enterprises must for the present be put aside in order that the nervous system of the public may find opportunity for rest and recuperation. And that future generations may not deride us for our lack of enterprise, let us write large in the literature of to-day this memorial inscription: The influenza did it.

INTRAMUSCULAR ABSCESS FOLLOWING AN ATTACK OF GRIPPE.

At a recent meeting of the *Société de médecine et de chirurgie pratiques*, the proceedings of which are reported in the *Gazette médicale de Paris* for March 10th, M. Diamantberger related the case of a man who had an attack of grippe accompanied with angina and laryngitis. At the end of three or four days he recovered, and, when his health was restored, went out one day to his office. He was not exposed to cold, and he did not seem very much fatigued; but that evening he complained of a severe pain in the calf of the right leg, followed by a swelling. On examination, it was ascertained that in the middle of the calf of the right leg there was a swelling of considerable size with manifest hardness of the tissues, but without change in the coloration of the skin. The swollen part had caused no alteration in the shape of this region, but it was somewhat painful, and there was a slight puffiness of the knee joint near the lateral ligaments. M. Diamantberger had prescribed absolute rest and applications of bran and water to prevent a sanguineous effusion. The temperature was normal, the general condition was good, and there was no sugar or albumin in the urine. At the end of five or six days the swelling became softened and the temperature rose to 100° and 102°. Two days after, the diseased region clearly indicated the presence of an abscess, and at the same time a small, painful swelling, red and freely fluctuating, appeared near the pronator muscles of the left forearm. The two abscesses were opened, and the patient recovered rapidly.

The history of this case, says M. Diamantberger, is interesting because of the strange nature of the complications. In his opinion, there had been a muscular rupture, aggravated by the grippe, which had given rise to myositis in a patient predisposed to it by the bad condition of his muscles, and an effusion of blood had given rise to suppuration. The supposition of a venous rupture was admissible, as the patient's leg showed several varicose dilatations. One thing was certain, says M. Diamantberger, that, in this case, the grippe had been the cause, either directly or indirectly, of the intramuscular abscesses.

MINOR PARAGRAPHS.

THE NEW YORK STATE VETERINARY COLLEGE.

A recent act of the Legislature establishes a State veterinary college in connection with Cornell University at Ithaca, and appropriates a sum not to exceed $50,000 for the purpose of constructing and equipping buildings suitable for the college on the university grounds. We are glad of any proper step that tends to advance either the study and teaching of veterinary medicine or the prestige of such an excellent university as Cornell; but we do not regard this action on the part of the State as proper. We quite agree with the *Sun* in its comments on the act. That paper says: "The well-being of domestic animals, particularly of the horse and cow, is extremely important to the community, and can hardly be preserved without the aid of qualified persons trained in the sciences and arts of veterinary medicine and surgery. But why should the State of New York, which does not maintain any school for the training of medical men to treat human beings, spend $50,000 to establish an institution to teach men how to doctor horses and cattle?"

NEW JOURNALS.

We have recently received the initial numbers of two new monthly periodicals, one of which, entitled *Science Progress*, is devoted to current scientific investigation. It is published in London and conducted by Mr. Henry C. Burdett, the well-known writer on hospitals. The other is the *New York State Medical Reporter*, published in Rochester and edited by Dr. H. Bronson Gee.

THE ROME CONGRESS.

It is not to be doubted that the scientific aspect of the International Medical Congress in Rome has been as gratifying as its festal features. Among these was a party in the garden of the Quirinal on Monday, followed by illuminations of various ancient ruins in the evening.

THE AERZTLICHER ALMANACH.

We regret to learn that the ill-health of Dr. Kállay, of Carlsbad, the editor of this very useful publication, has delayed its appearance thus far this year. It is announced that a double number, for 1894 and 1895, will soon appear.

ITEMS, ETC.

The Michigan College of Medicine and Surgery held its fifth annual commencement exercises in the Detroit Opera House on Thursday, March 29th. The graduating class numbered twenty-seven. An address was delivered by Dr. Edward W. Jenks.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 25 to March 31, 1894:*

Horton, Samuel M., Lieutenant Colonel and Deputy Surgeon General, will, by direction of the President, report in person to the president of the Army Retiring Board, at San Francisco, Cal., for examination by the board.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 3, 1894:

DISEASES.	Week ending Mar. 27.		Week ending Apr. 3.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	0	0
Typhoid fever	12	2	8	3
Scarlet fever	156	13	158	15
Cerebro-spinal meningitis	0	0	0	0
Measles	350	30	318	24
Diphtheria	227	48	224	56
Small-pox	18	4	33	5

Society Meetings for the Coming Week:

Monday, *April 9th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Society of Medical Jurisprudence, New York; Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, *April 10th:* Medical Society of the State of Tennessee (first day—Memphis); New York Medical Union (private); Kings County, N. Y., Medical Association; Medical Societies of the Counties of Jefferson (quarterly—Watertown), Oneida (quarterly—Utica), Ontario (quarterly), Rensselaer, and Tioga (quarterly—Owego), N. Y.; Newark, N. J., Medical Association; Trenton, N. J., Medical Association (private); Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Bergen, N. J. (annual—Hackensack) and Cumberland, N. J. (annual), County Medical Societies; Fairfield, Conn., County Medical Association (annual); Northwestern Medical Society of Philadelphia; Baltimore Gynæcological and Obstetrical Society; Practitioners' Club, Richmond, Ky.

Wednesday, *April 11th:* Medical Society of the State of Tennessee (second day); American Microscopical Society of the City of New York; Metropolitan Medical Society, New York (private); New York Pathological Society; New York Surgical Society; Medical Society of the County of Albany, N. Y.; Tri-States Medical Association (Port Jervis, N. Y.); Pittsfield, Mass., Medical Association (private); Philadelphia County Medical Society; Kansas City, Mo., Ophthalmological and Otological Society.

Thursday, *April 12th:* Medical Society of the State of Tennessee (third day); New York Academy of Medicine (Section in Pædiatrics); New York Laryngological Society (private); Brooklyn Pathological Society; Medical Societies of the Counties of Cayuga and Fulton (quarterly), N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *April 13th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.

Saturday, *April 14th:* Obstetrical Society of Boston (private).

Letters to the Editor.

THE HOMŒOPATHIST WHO "PRACTICES BOTH WAYS."

New York, *April 2, 1894.*

To the Editor of the New York Medical Journal:

Sir: There is no more gratifying and certain indication of the ultimate and, we hope, not very remote downfall of our sister science (?) homœopathy than the increasing prevalence of "the homœopathist who practices both ways." The editor of the *New York Medical Journal*, five years ago, called attention to a Judicial View of Medical Sectarianism in which Judge George C. Barrett, of the New York Supreme Court, referring to homœopathists, speaks of "their constant and clandestine resort to what they are pleased to term allopathy." To-day it would probably be difficult to find a man who professes to be a strict homœopathist, if we may judge from reports of patients of these so-called homœopathic practitioners, who are very apt to remark: "Oh, our doctor is very liberal. He says he practices both ways." Liberal indeed! Now, in the first place, when a homœopathist admits to his patients that he "practices both ways" he acknowledges the weakness and inadequacy of homœopathy. And he probably makes the humiliating admission either from a desire to be honest or in deference to a demand for honest treatment on the part of patients no longer willing to believe that a remedy can do good only under the law of *similia similibus curantur*. Few of the laity possess any clear understanding of the nature of the controversy between homœopathy and "the old school." But they have come to feel satisfied that the latter can not be altogether wrong, and they demand rational treatment. The modern homœopathist takes a new departure and meets the demand by "practicing both ways"; in other words, by professing to practice both ways, while he still calls himself a homœopathist. He may be honest and himself deceived as well as deceiving others, but I feel compelled to assert that there can be no such thing as a true *homœopathist* practicing both ways.

The fundamental doctrine of homœopathy is an *exclusive* dogma: "Like things are cured by like, and remedies acting under any other law are never curative." This construction of the aphorism *similia similibus curantur* is justified by numerous confirmatory assertions of the highest homœopathic authority—*e. g.:*

"The curative virtues of medicines depend solely upon the resemblance their symptoms bear to those of the disease."

"Even among diseases which occur in the ordinary course of Nature, it is only those whose symptoms are similar that can cure or destroy each other. This faculty never belongs to a disease that is dissimilar. From this the physician may learn what are the remedies with which he can effect a certain cure—that is to say, that he can cure with none but such as are homœopathic."

"The proceedings in Nature will teach the physician that he ought to treat disease by no other remedies but such as are homœopathic, and not with allopathic agents, which never cure the patient, but only render his condition still more deplorable." (*Organon*, pp. xvii, xix, Dub. ed., 1833.)

These being the teachings of homœopathy, how can a *homœopathist* "practice both ways"? Just as soon as a man admits the curative power of a remedy acting under any law other than that of *similia similibus*, he ceases to be a homœopathist. He has renounced his creed and embraced another. As well might a Baptist clergyman baptize by *sprinkling* as well as *immersion*, and say "he was very liberal and practiced both ways." It is a question of consistency. Clearly, the Baptist is limited to baptism by immersion, and the homœopathist to healing by homœopathy. But as other denominations may employ immersion, so all that is good in homœopathy may be employed in regular medicine, which knows no limitations of doctrine or dogma and seeks diligently after that which is best. Our practice is unrestrictedly *eclectic*. A few well-known "homœopathists" seem to have realized the absurdity of their position, and have become members of the Medical Society of the County of New York. Is it too much to hope that another generation will have said a last good-by alike to homœopathy and "the homœopathist who practices both ways"?

J. Milton Mabbott, M. D.

THE OPHTHALMOMETER.

New York, *March 25, 1894.*

To the Editor of the New York Medical Journal:

Sir: Dr. Roosa's eulogy of the Javal ophthalmometer in this week's *Journal* is so much at variance with my own observations with this instrument that I thought the results of my experience might possibly be of interest, especially as it is founded upon cases taken from general practice.

I have had my ophthalmometer about eighteen months, during which time I have used it in a hundred and forty-four cases, but simply as an auxiliary to other methods of examination. Of these cases, in only forty-five were the results obtained by this instrument found to be correct, and in these forty-five the astigmatism was generally of high degree. In the remaining ninety-nine the results were entirely wrong and misleading.

All these cases were tested under a mydriatic. In the younger patients atropine was used, while in those over twenty-one homatropine was found to answer the purpose.

As it has seemed to me that the greatest number of cases of reflex disturbances from astigmatism are associated with low degrees of that error (0·50 D. to 1·25 D.), and as it is chiefly as a means of affording relief to sufferers from these reflex symptoms that refraction is of interest to the general practitioner, I consider that the ophthalmometer is an instrument to be avoided by him. To me it seems like a clumsy, expensive, and unreliable affair, adapted only to producing a mental effect upon the patient. And I am firmly convinced, on looking over my records, that, had I relied upon this instrument to the exclusion of mydriatics and retinoscopy, I should not have had the deeply gratifying success in the treatment of the long train of reflex disturbances from eye strain which has marked my little excursion into the domain of ophthalmology.

Walter G. Hudson, M. D.

CHANCRE OF THE GENITALS WITHOUT COITUS.

Boston, *April 2, 1894.*

To the Editor of the New York Medical Journal:

Sir: Having just finished reading Dr. Buckley's interesting book on *Syphilis in the Innocent*, I am tempted to send you an account of a case in which the infection occurred in a peculiar manner, different from any I have seen mentioned. It was of genital origin, yet innocently contracted. A child, ten years of age, was troubled with pin-worms, some of which had crawled into the vulva. The mother, who had mucous patches, attempted to remove them by wiping the parts with a soft cloth. One of the parasites clung tenaciously; the mother then expectorated upon the part to moisten it, and rubbed hard to remove the offender. Infection took place and a chancre developed at the seat of the abrasion formed. Constitutional syphilis followed. The mother had been cautioned against communicating the disease by kissing, etc.

J. Foster Bush, M. D.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

Meeting of February 7, 1894.

The President, Dr. Frederick H. Wiggin, in the Chair.

(*Concluded from page 198.*)

Cœliotomy for Bilateral Pyosalpinx, followed Four Days later by Appendicitis; Operation; Recovery.—The President reported such a case. (See page 430.)

Dr. W. Evelyn Porter said that he had had a similar case in which perityphlitis and pyosalpinx had coexisted, but the circumstances had been such that the operation had been done for both conditions at the same time. The abscess had been on the left side, the appendix had contained a fæcal concretion, and the abscess had been attached to the left tube and ovary, the appendix being so elongated as to wind around the abscess mass to the opposite side of the abdomen.

Dr. C. C. Barrows thought that Dr. Wiggin deserved much credit for his skill in diagnosis and boldness in operating on this case, for he thought very few surgeons would have done the operation. With a patient in the Trendelenburg posture, one could both see and feel the appendix through a median incision. In many cases of pyosalpinx he had found the appendix adherent, and in three cases he had found pus in the appendix, which had apparently communicated with the pus in the right Falloppian tube. He thought it should be a cardinal rule for every abdominal surgeon to carefully examine the appendix every time the abdomen was opened, with a view to its removal unless entirely healthy. It was quite probable there had been a pathological condition in the appendix before the primary laparotomy in Dr. Wiggin's case, and the necessary injury done by disturbance of adhesions might have brought on an acute inflammation of the organ.

Dr. R. A. Murray also thought the operator should be congratulated on his success in this case. He had seen quite a number of septic cases where the surgeon had refused to reopen the abdomen because the result was so commonly fatal. A case had been reported, he believed by Dr. Coe, of late fever in a parturient woman. About two weeks after confinement there had been a rise of temperature, associated with a swelling on one side of the abdomen. There had been no explanation of the rise of temperature until about a week later, when a consulting surgeon had decided it was due to a pyosalpinx. The abdomen had been opened, and it had been found that there was a pyosalpinx and also an appendicitis. The appendix had contained pus, which had ruptured into the ovarian tissue, producing an ovarian abscess and also an involvement of the tube. The trauma of pregnancy had apparently stirred up a latent appendicitis. When we recalled the amount of trauma incident to the Credé expulsion of the placenta, or similar manipulation of the uterus during labor, it was not surprising that such an accident should occur.

Dr. Goldthwaite said that he had operated for appendicitis only a few times, and with not very flattering success. In two of his cases the appendix had been adherent to the ovary. In one case there had been ulceration through the appendix, but the abscess cavity had been shut off from the general abdominal cavity. He had been surprised in several cases at the extreme length of the appendix. He would also congratulate the operator most heartily on his great success in this case.

Dr. Parker Syms said that he had seen a good many cases where infection had occurred after laparotomy, but he could recall no instances where he had seen the abdomen reopened, although he thought it would have been desirable in several of the cases. No one could say that a curable condition might not be discovered in this way.

Bright's Disease of the Kidneys, with Special Reference to Albuminuria and Uræmia so called, including Puerperal Convulsions.—Dr. R. C. M. Page read a paper with this title. (To be published.)

Dr. W. B. Vanderpoel discussed albuminuria as a symptom in general. He said that the value of albuminuria as a symptom depended largely on the collateral urinary conditions, the presence or absence of casts, the specific gravity of the urine, the daily quantity, the amount of urea, and the persistency and amount of albumin. For the first clear idea of the clinical importance of albumin in the urine we were indebted to Dr. Richard Bright, in his *Reports of Medical Cases*, 1827 and 1831. It had long been considered sufficient to ascertain the presence of proteid matter to pronounce the case one of renal origin, probably a nephritis, and to deduce the worst prognosis; now, however, it was well known that several other proteid bodies might have existed in the urine besides albumin, each bearing its own significance, and that the presence of many or all might depend on causes widely remote from the kidneys. Some observers, notably Posner and Senator, even maintained that albumin existed at times in the urine of every healthy person, and that we should recognize a physiological albuminuria as we did a glycosuria, oxaluria, or indicanuria of like nature. Again, well-pronounced forms of renal disease had frequently been reported in which albumin had been entirely absent from the urine, constantly or intermittently. In the large majority of cases albumin certainly did accompany, and its detection afforded good ground for suspecting organic renal lesion, but there existed a large class in which no such significance attached to albuminuria as to existing conditions, whatever its prognostic import might be. This phase or type of the morbid condition was considered in a paper recently read before the Section in General Medicine of the Academy, and to this we might profitably confine our attention in this discussion.

In considering albuminuria without manifest organic lesion, we might bring under a threefold heading all the clinical varieties reported by different writers—viz., (1) simple albuminuria, (2) the uric acid or oxaluric form, and (3) the neurotic type. The term "simple albuminuria" was applicable to a large class presenting no preceding or accompanying symptoms indicating morbid disturbance of the digestive, circulatory, or nervous functions; giving no indication from uranalysis of organic renal lesion; and whose existence was only revealed accidentally through examination by the family physician or, more often, by the examiner for life insurance. These were the true functional, physiological, or chronic albuminurias. The discoverable causes were (1) dietetic, (2) exposure to cold or cold bathing, (3) muscular activity, and (4) mental strain, worry, or prolonged brain activity.

The mere ingestion of food sufficed in those predisposed, while in others an idiosyncrasy existed toward certain food articles, as eggs, cheese, buckwheat cakes, pastry, meats, etc.

The influence of exposure to cold had been clearly proved by the observations of Grainger Stewart. Under the head of "muscular activity" were included all states, conditions, or pursuits which involved any tax on the physical powers—*e. g.*, football playing, soldiers on the march, pedestrianism, blowing of wind instruments, parturition, and exceptionally the erect posture. The influence of mental strain had been observed in business and professional men. Its influence had been more or less satisfactorily explained (1) by toxic substances in the blood—*e. g.*, uric acid or lime oxalate—due to diseased or perverted gastric or intestinal function, and which caused mechanical irritation of the kidney in their excretion; (2) by a possible transudation of albumin from the renal blood-vessels, due either to changes in the caliber of the vessels or in the rapidity of the blood current depending on reflex influences, or to a plethoric condition of the blood, or to the osmotic influence of an increase of the salts of the blood or the urea; (3) by excessive disintegration of the red blood-corpuscles, adopting the theory of Dr. T. Oliver, of Newcastle, England, as to the origin of urea depending on excessive hepatic stimulation under nitrogenous-food ingestion; and (4) by an actual glomerulonephritis.

In the uric acid or oxaluric form the daily quantity of urine remained normal, but the amount of solids was materially increased, furnishing a concentrated urine, having a specific gravity of 1·022 to 1·036. The chlorides were normal or increased, never diminished as with contracted kidney; the phosphates and urea were normal or increased; casts, hyaline or epithelial, might be present. The quantity of albumin was usually small; it was most abundant early in the day and might be absent in the evening. Two factors were mainly active in producing this condition—viz., (1) excess in an insufficiently mixed diet, and (2) an inherited or acquired sensitive condition of the liver and kidneys, called the uric acid or lithæmic diathesis, which rendered them prone to functional disturbance. The causes were (1) mechanical renal irritation, due to the sharp uric-acid or lime-oxalate crystals which, if lodged, might produce a persistent albuminuria; (2) an altered blood pressure in the renal vessels, due to reflex irritation of the terminal pneumogastric filaments; and (3) chemical blood changes.

Frequently no constitutional symptoms were noticeable, but more commonly there was a dyspeptic history with pronounced nervous and circulatory disturbances, some cases presenting a rigid, high-tension pulse, warning of impending organic renal changes.

In the neurotic type the cases followed or accompanied manifestations of epilepsy, chorea, apoplexy, hysteria, influenza, exophthalmic goître, and, more rarely, infantile paralysis, multiple sclerosis, and the general paralysis of the insane. Puncture of the floor of the fourth ventricle near the glycosuric center would produce albuminuria, as would also lesion of the cerebral peduncles and section or irritation of the spinal cord. Direct nervous influences acting from the brain or spinal cord through the splanchnic, cœliac, and renal nerve plexuses produced changes in the renal circulation resulting in albuminuria.

The speaker said there were a few types of obscure ætiology which he would not attempt to classify; these were (1) a form attending extremes of temperature; (2) a type occurring in the newly born; and (3) one occurring after anæsthesia. A nervous origin might possibly be assigned to all of these, as with a glycosuria which might present under like conditions.

The prominent clinical features presented by these albuminuric cases were worthy of our careful scrutiny, as a diagnosis from the organic form could often only be made by exclusion. In the purely functional forms the pulse-rate was usually normal and the tension feeble. When both were constantly increased we might justly consider that we had to deal with a commencing cardiac hypertrophy and arterio-sclerosis. The amount or persistency of the albumin was of little moment in determining the diagnosis. The forms usually found and alluded to as of pathological import were serum albumin and serum globulin; these were found in all albuminous urines. Other and adventitious forms, difficult to distinguish, might be associated with these. Many of the latter mingled with the urine after its secretion, and were derived from disintegration of the renal epithelium, or were due to the presence of blood, pus, prostatic or seminal fluid, etc. The microscope and clinical history would usually distinguish these adventitious forms, except in the case of mucin, a fruitful source of error. This substance Sir W. Roberts considered was present in all urines, healthy or morbid, but W. H. Washburn regarded it as of the same diagnostic import as albumin, if persistent or in large amount.

The quantity of urea was an exponent of the working capacity of the kidneys, but was influenced by the quantity of fluid consumed, kind of food, exercise, and digestive state. It should be normal in functional albuminuria. Casts originated in the renal tubules from albuminous or fibrinous exudates from the blood. They were found in most forms of renal congestion and inflammation, but why they were at times present and at others absent under the same apparent physical condition we could not say. Although usually of grave import, many cases in which they had been found had recovered, and Charcot stated that hyaline casts might exist in normal urine.

If the specific gravity was high we might safely assume that the kidneys were performing their function properly, particularly if the daily quantity of urine was normal. The daily quantity indicated the filtration activity of the kidneys and should remain normal here, influenced solely by the usual causes—atmospheric temperature, moisture, and diet.

The color of the urine varied from pale to dark or even black. These grades depended on the concentration of the urine, or were due to articles of diet, certain drugs, or abnormal products from the patient's own economy. The phosphates, urates, chlorides, and oxalates had been already considered.

The patient often presented a peculiar pallor, associated with disinclination to exercise, poor circulation, and transient œdemas of feet or eyelids. These appearances might warn us of these functional forms, although the same symptoms in a more intense degree were seen in the organic form. He always felt distrustful toward these causes, and only relaxed this feeling when the albumin had been absent from the urine for weeks or months consecutively, and that secretion had become entirely normal in other respects. Undoubtedly many cases might persist for years and never go further toward organic disease, but the natural tendency was not so benign, and he would pronounce these cases as suspicious and worthy of careful supervision and demanding a guarded prognosis.

Dr. William H. Porter spoke more particularly of the source of the albumin in the urine. In reference to this question he said that he had some rather radical notions. He thought it came from two sources—one of which was the filtration of the serum-albumin from the blood in the urine, and the other an excretion of an isomeric form of albumin from the blood by the epithelial cells into the renal tubules. In the majority of instances he thought that it was due to vicarious action of these epithelial cells which took up the albumin and transformed it into another type and excreted it into the urine. In that particular type which was truly an inflammatory process and where the blood-vessels had been absolutely injured—such as occurred with any inflammatory process—he believed that by virtue of the alteration of the chemical composition of the walls of the blood-vessels, serum-albumin passed through, as in all inflammatory processes; but if there were no inflammatory renal affection he did not believe that this non-diffusible serum-albumin would pass through a non-diffusible membrane. He thought that all the experimental evidence, pathological lesions, and clinical observations pointed strongly this way. The ureter, artery, and veins had been tied, and as a result albumin had been found in the urine; but it had been forgotten that in these experiments the nutritive activity of the kidney had been greatly altered. This changed the function of the epithelium, and caused it, he believed, to excrete the isomeric form of albumin. Hence he thought that the albumin in the urine in the majority of instances was an excretion by the epithelial cells. In all that type of renal lesions in which the blood-vessels were most involved there was the least albumin in the urine, and in all that variety in which the blood-vessels were the least involved, except an acute and truly inflammatory process, and in which the epithelium was most involved, there was the most albumin, and it was in direct proportion to the amount of degeneration in the epithelial cells. Chemically, it was known that the serum-albumin of the blood was precipitated in an alkaline medium or in the natural fluid of the blood. Some other salts existed in the urine, but we were always warned to acidulate the urine in order to get albumin; hence, in the majority of cases, the albumin obtained in the urine was not serum-albumin. We must act upon this derived or isomeric form of albumin by an acid and convert it into an acid albumin before the heat would precipitate it.

To sum up, the experimental, pathological, and chemical evidence pointed strongly to the albumin in the urine being an isomeric type of albumin excreted from the egg-albumin and taking the place of the urea which under normal circumstances was generally excreted by the renal cells.

Taking this view of the situation, he had been led to believe there was no such thing as functional albuminuria, but that the presence of albumin in the urine always meant a certain amount of degenerative change in the epithelial cells—a pathological condition dependent upon the amount of albumin—a greater or less degree of degeneration in the epithelial cells. He did not believe, however, that the mere presence of albumin in the urine meant that the patient had Bright's disease or was going to have Bright's disease, for he believed these renal degenerative conditions were easily curable if taken at a moderately early stage and properly treated. He believed all renal conditions were secondary diseases, and he did not believe there was such a thing as a primary disease of the kidney, commonly called Bright's disease; they were all due to defective nutrition, and increased work thrown upon the kidney as a result of this defective nutrition. An acute inflammatory condition he believed was due to a sudden congestion of the renal circulation, which overstretched the blood-vessels in the glomeruli and renal tissue, and so caused direct injury to the renal vessels. If we simply removed the work from the kidney and improved its nutrition, we would very soon see these cases improve.

With reference to treatment he would say that he had very great faith in pilocarpine, and he had probably used it as much as any one here in this city. The great mistake in its use was in employing too small doses; he had never given less than three fourths of a grain, and he had given as high as two grains hypodermically, followed in twenty minutes by another grain, and had never seen any ill effects from its use in this way. When given in such large doses it not only excited the skin to activity, but also excited the liver, the intestines, and kidneys to activity; and as a result of this one obtained a forced oxidation of the by-products floating in the blood which he believed caused the uræmic symptoms. He thought the reason so much discredit had fallen on pilocarpine was because it had been so frequently used as a last resort after calomel, jalap, and elaterium had been administered. Under these circumstances it would certainly cause alarming depression of the system, such as he had not observed when these other remedies had not been first introduced.

Dr. J. CLIFTON EDGAR spoke of the treatment of puerperal eclampsia. The treatment was both preventive and curative. Under the head of preventive treatment we were met with the fact that the scientific preventive treatment of this condition was still a dream of the future, because we did not yet know the cause of puerperal eclampsia. It had been said repeatedly that there was a certain relationship between albuminuria and puerperal convulsions, yet some women having very little albumin in the urine would have such convulsions, while others having a large quantity of albumin would not have convulsions at all. In sixteen per cent. of cases of puerperal eclampsia there was no albumin whatever in the urine. It was generally believed that if convulsions occurred, albumin would appear after the first, second, or third convulsion, yet there were carefully reported cases on record where after several convulsions, and even after coma, no albumin had been found in the urine. He recalled one such case which he had seen recently at the New York Maternity Hospital, Blackwell's Island. The urine was drawn repeatedly by catheter, and as repeatedly examined by various tests, but no albumin was found. After continuing in the coma for four hours the woman died. The pathologist reported that the autopsy showed little or no change in the kidneys. From the first convulsion, occurring in the second stage of labor, to the death of the woman, the time was four or five hours.

There were said to be two clinical guides to impending eclampsia. One of these was diminution in the quantity of urea in the urine. Dr. E. P. Davis, of Philadelphia, had recently read a paper on what he had called The Toxæmia of Pregnancy. As a result of five hundred and sixty-four examinations he had found that the average quantity of urea excreted by the pregnant woman was 1·4 per cent., and that after labor the proportion was 1·9. His observations had also shown that if the quantity of urea fell below 1·5 per cent. during pregnancy, treatment directed to stimulating the excretory organs would be followed by disappearance of the headache, gastric disturbances, and other toxic symptoms which might have been present. Such a guide was not of great practical importance, for laboratory experiments showed that if a quantity of urea were injected into a rabbit no toxic symptoms would be produced. There were many much more toxic substances than urea—for instance bile, which was ten times as poisonous. As a result of the experiments of Bouchard, of Paris, on auto-intoxication, it was found that the normal urine when injected into a rabbit was poisonous in the proportion of forty to sixty cubic centimetres per kilogramme of rabbit, and that when kidney failure resulted, one hundred to one hundred and twenty cubic centimetres were necessary to produce toxic symptoms per kilogramme of rabbit. Dr. Mary Putnam Jacobi had verified these experiments in this country with the urine of pregnant women. This was extremely interesting, for it showed that in the absence of any diminution of urea there might be kidney failure and retention of toxic material in the blood, leading to convulsions or other symptoms. Hence, our present knowledge only permitted us to say that in pregnancy certain toxic substances were retained in the blood, but what these substances were we did not yet know.

The best preventive treatment of puerperal eclampsia was an eliminative treatment—stimulation of the kidneys, intestines, liver, skin, and lungs. By the expectant treatment of a few years ago the mortality was thirty per cent. for the mother and seventy-five per cent. for the child. In the actual curative treatment there were three guiding principles, viz.: (1) The control of the convulsions; (2) the emptying of the uterus; (3) the elimination of the poison. For the first he knew nothing better than chloroform, not continued for more than two hours. Certain women took this badly, and then we must fall back upon chloral. The best treatment was to follow the chloroform with chloral so as to prolong the effect of the chloroform.

He would not resort to morphine until these two agents had been tried. It had been accepted as a clinical fact that in ninety per cent. of the cases when the uterus was immediately emptied the convulsions ceased, and the patient was practically convalescent. In the second stage of labor the emptying of the uterus was comparatively simple, but before confinement it was more grave. The speaker said that he had been taught in Germany that the induction of premature labor was criminal, for the irritation tended to bring on convulsions. Last year, at a discussion at the Academy of Medicine, out of eleven speakers ten were in favor of the immediate emptying of the uterus in cases of eclampsia. In the first stage of labor, the uterus might be emptied in thirty minutes with perfect safety to both mother and child. In the majority of cases the first or second convulsion induced labor and caused the supravaginal portion of the cervix to be drawn upward. When this had occurred, the uterus could ordinarily be emptied in forty minutes. As soon as convulsions occurred in the first stage of labor, he would favor the emptying of the uterus (1) by *accouchement forcé*, and (2) by deep incision of the cervix. He believed there were some primiparæ who could not be safely delivered by one of these operations alone. In a recent eclamptic case at the Emergency Hospital, after two bougies had been in the uterus twenty-four hours and had failed to induce labor, he chloroformed the patient and performed manual dilatation of the cervix, or *accouchement forcé*, for twenty minutes. At this point the mother's heart became weak, and, as the cervix was only two thirds dilated, it was incised and the child extracted, and the parturient canal packed with iodoform gauze. Mother and child recovered.

The eliminative treatment should go hand in hand with the controlling of the convulsions and the emptying of the uterus. Catharsis could be excited by croton oil if the patient were comatose, and this could be followed by salines. High injections of solutions of sulphate of magnesium were very valuable here. Nitroglycerin when given hypodermically was very valuable for its action on the heart and kidneys. Strange as it might seem, strychnine had proved very useful when given to combat the shock of the puerperal state. It certainly did not tend to increase the tendency to convulsions. He had not used bloodletting in puerperal eclampsia, although it was doubtless of advantage if the arterial tension were great. His practice was under such circumstances to allow some bleeding to take place in the third stage of labor. It had been well said that the better obstetrician was he who avoided eclampsia by preventive treatment rather than he who would perform a difficult and bloody operation for the relief of this condition. It was quite common for eclampsia to occur in women pregnant out of wedlock. The two cases cited were such. In cases in which the children were large or the pregnancy multiple, there was also greater liability to puerperal eclampsia. Increased metabolism accounted for these latter facts.

Pilocarpine he had used in one case. Pulmonary œdema had almost immediately ensued, and death had occurred in six hours. An autopsy had revealed advanced kidney disease.

Veratrum viride he only used when the immediate emptying of the uterus, the bleeding encouraged in the third stage, and the chloral hydrate failed to reduce the arterial tension. He avoided its use when possible.

Dr. C. E. Lockwood said that the literature of Bright's disease seemed to be a wilderness of theories and a dearth of facts. A glance at the causes of dropsy or albuminuria showed that the theories advanced seem to refer to an increase of arterial tension. Another theory of albuminuria was that it depended upon the rapidity of the circulation of the kidney. When it fell below a certain point, the oxidation in the epithelial cells was imperfect, and they became permeable to the albumin. Roberts divided cases of puerperal eclampsia into three classes—viz.: (1) Those occurring in Bright's disease; (2) those occurring in primiparæ, partly uræmic and partly reflex where there was passive congestion; and (3) those due to meningeal irritation. In the two latter this writer advised depletion, whereas in the first class he spoke of chloroform but did not advise depletion. The speaker said the suggestions in the paper regarding the circulation, vitiation of the blood, and the sensibility of the nerve centers were well borne out in these theories which had been promulgated.

Dr. Page said that he still held that when we came to treat these convulsions there was no time to eliminate the poison—if we attempted this we might eliminate the patient. The time to adopt eliminative treatment was in the interval, when there was plenty of time for that treatment. Bleeding did not eliminate the poison nor did nitroglycerin, but within five minutes the excited nerve centers and the arterial tension could be relieved by the treatment he had described in his paper, and in this way we could bridge over the difficulty until the more urgent symptoms had subsided.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Fifteenth Annual Congress, held in New York on Monday, Tuesday, and Wednesday, May 22, 23, and 24, 1893.

The President, Dr. Morris J. Asch, of New York, in the Chair.

(*Continued from vol. lviii, page 674.*)

The Treatment of Deviations of the Nasal Sæptum.—Dr. John O. Roe, of Rochester, read a paper on this subject. (See page 424.)

The President: In order to correct deviations in the nasal sæptum it is absolutely necessary that the elasticity of the sæptum be broken down, and this can not be done unless you divide it entirely. In my opinion, there is no other way.

Dr. Mulhall: Dr. Roe's instrument seems to defeat the very purpose for which Dr. Steele's instrument was intended, which was to cut entirely through the sæptum. Unless you cut all the way through, I do not see how you can force the fragments sufficiently far back. It also entails less danger of septic poisoning than by cutting only on one side.

Dr. De Blois: Dr. Leland, of Boston, in correcting these deviations, breaks the sæptum partly with his forceps and partly with his fingers, and then inserts a perforated plug of hard rubber. I did it as long as ten years ago in the same way. I inserted an ordinary elliptical tube, with plaster of Paris at the outer end to keep it in place; but, although I did this long before Dr. Leland, I never obtained the universally excellent results that he does.

The President: In a great many of these cases I break down the cartilage with the finger, pushing it through the opening made in the sæptum, and breaking down each segment at its base.

Dr. Wright: I think the success Dr. Roe has obtained in his cases is truly remarkable. I myself must confess that I have met with many dismal failures. I remember only one case that turned out entirely satisfactorily. I have found it difficult to keep the fragments in place. Without cutting entirely through the sæptum, I do not see how its resiliency can be broken down. It always springs back. In one case this winter I made a number of parallel incisions with Dr. Asch's instrument, and then used the finger to push the fragments into a straight line, and inserted a very thick drainage-tube, as large as my little finger, and left it in there, changing it every day. It always gave rise to much pain on removing it. I must confess that I am extremely doubtful about the theory of keeping the nose aseptic; I do not think it is possible. Of course, Dr. Roe has had extensive experience in this line, and his word carries great weight. He did not state what he did with the redundant portion of the sæptum. When you push the convex sæptum back into its normal position, you have some redundant tissue left. It seems to me that this must be crumpled on itself in order to bring the general contour of the sæptum to a straight line.

Dr. Roe: In correcting these deviations of the nasal sæptum we must remember that no one method of operating will apply in every case. We must adapt the operation to the varying conditions found in each case, and no one instrument will serve the purpose every time. In some instances such instruments as I have shown you are not required. Sometimes the osseous portion of the sæptum is so thin that it can be forced over with the finger or with a smooth spatula, and held there by a retaining dressing. The osseous portions will often remain in place after being held there four or five days. The cartilaginous portion must, however, be freely incised, and, being more resilient, must be held there a much longer time. I have had no trouble with the redundant tissue in these operations. In the osseous portion the bone is simply crushed, while the cartilaginous portion readily adapts itself to its new position. When performing these operations in children I use chloroform, and in adults cocaine; although, if the patient is very nervous, it may be necessary to give a few whiffs of chloroform at the moment of performing the operation.

Book Notices.

A Text-book of the Theory and Practice of Medicine. By American Teachers. Edited by William Pepper, M. D., Provost and Professor of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania. In Two Volumes. Illustrated. Vol. II. Philadelphia: W. B. Saunders, 1894. Pp. xii–1046.

The volume opens with "general considerations concerning the biology of bacteria, infection, and immunity," and sixty-nine pages are devoted to these subjects. Though advances in this branch of medical science are now so common and so rapid that a theory of to-day is obsolete to-morrow, and therefore it may well be that these "considerations" may soon be of small value as compared with the rest of the work, yet are these no arguments against the introduction of matter which represents the present state of our knowledge upon subjects so important. This present knowledge is put forth by the writers with great force, and, from the practitioner's standpoint, with much completeness. Especially interesting and valuable is the consideration of artificial immunity as produced by inoculation of small (not fatal) quantities of virulent cultures of specific micro-organisms, or of attenuated micro-organisms, by the injection of products of these micro-organisms or serum from animals artificially rendered proof against the disease. The chapter is concluded by a necessarily brief but highly suggestive consideration of serum therapy.

Chapters on diathetic diseases, rickets, osteomalacia, obesity, biliary lithiasis, gravel, diabetes mellitus, and polyuria follow.

Rheumatism and gout are next considered, and most ably. A classification of "that extensive group of symptoms which, while dependent upon the same causes with articular rheumatism, are displayed in those organs and tissues that are not connected with the joints themselves," under the heading "abarticular rheumatism," is most logical and satisfactory. In this class are placed the manifestations of the rheumatic poison in the skin, the blood-vessels, the eye, the muscles, and the viscera.

The diseases of the blood come next, and the methods of blood examination are carefully described. The chapters on the blood diseases are among the most valuable in the volume, and present the recent advances in this most important subject. The illustrations are a feature of these chapters and are unusually good.

A hundred and fifty-five pages are given to the diseases of the heart, and, although it was originally the intention of the editor to have them written by an authority other than himself, it is difficult to see how the work could have been more satisfactorily done. After chapters on the blood-vessels, the respiratory passages, and the pleura, are presented the diseases of the lungs.

Examinations of the urine and the diseases of the kidney are next considered. The chapters on kidney diseases present a classification at once so simple and so complete, and a description so perfect, as to rival in excellence, if not to excel, any other portion of the book. A more satisfactory presentation and elucidation of this intricate subject it would be difficult if not impossible to suggest.

The diseases of the stomach and intestines are then described, and then those of the liver.

The discussion of diseases of the pancreas occupies a greater space than is usual in medical text-books, and naturally, since they are affections of more recent investigation. It is, therefore, a matter of congratulation that they are discussed by an authority whose name has long been associated with investigation into their pathology. Their consideration shows great ability and completeness, and, though these affections can not be considered as finally solved, the contribution is exhaustive and complete to the point at present attainable. With this chapter the volume ends.

In our issue of July 8, 1893, we reviewed the first volume of this work and said: "It is undoubtedly one of the best text-books on the practice of medicine which we possess." A consideration of the second and last volume leads us to modify that verdict and to say that the completed work is, in our opinion, the *best* of its kind it has ever been our fortune to see. It is complete, thorough, accurate, and clear. It is well written, well arranged, well printed, well illustrated, and well bound. It is a model of what the modern text-book should be.

Lectures and Essays on Fevers and Diphtheria, 1849 to 1879. By Sir William Jenner, Bart., G. C. B., M. D. Lond., and F. R. C. P. Oxon., LL. D. Cantab. and Edin., etc. New York: Macmillan & Co., 1893. Pp. xii–3 to 581. [Price, $4.]

This volume is a fitting exemplar of the careful and scientific work that has placed the author in the foremost rank of his profession. It is to be regretted that the many demands made upon the physician's time at the present day prevent that review of the history of medicine that shows the slow growth of the science, as such, and the obligations that the profession is under to men whose skill has contributed to its advancement.

The volume is a collection of various essays that appeared between 1849 and 1879, and are now published in compliance with the request of many of the author's medical friends. These essays are based on the statistics of personal observation, regarding which the author wrote: "The method I have adopted, however prolix it may be, however difficult to conform to, however tedious the details into which it leads, has this advantage, that if the observer be honest and capable of noting what is before him, thinking men may judge of the value of his facts, the force of his reasoning, and the correctness of his conclusions; whereas, general observations, while they are totally incapable of proving anything, are exposed to all the fallacies of definite statements, because the one, like the other, rests ultimately on the accuracy of the facts observed. If the observations on which any reasoning is founded be erroneous, no cloaking of these observations in general terms can render the conclusions correct." It is to be regretted that many authors of the present day do not recognize this fact.

The volume is divided into two parts, one on fevers and one on diphtheria. The former is devoted to typhoid, typhus, and relapsing fevers and to the various phenomena of the acute specific diseases. The second section is composed of two lectures on diphtheria and one on croup. Even in 1861 the author advocated the value of local treatment of diphtheria, though he protested against the too frequent application of powerful solutions. These lectures can not fail to prove interesting to physicians.

Atlas of Clinical Medicine. By Byrom Bramwell, M. D., F. R. C. P. Edin., etc. Vol. II. Parts II and III. Edinburgh: T. & A. Constable, 1893. Pp. 45 to 90; 91 to 128.

The second volume of this admirable work is now complete. It has been issued in three fasciculi, each of about forty large folio pages. As in the first volume, the illustrations, which consist of thirty large plates and over twenty woodcuts, are a striking feature of the work. In the opinion of the author they are not, however, the most important feature. Great labor has been expended in the preparation of the text, and upon most subjects it is deserving of the highest commendation. The title is somewhat misleading, for the work is, in fact, a very elaborate illustrated treatise on clinical medicine. The same general plan has been adopted as in the first volume. The outline presented for the clinical investigation of each disease is a peculiar and very important feature. It has been prepared with much care and will prove of the greatest aid to the clinician in the recording of his histories.

The first part is devoted to measles, scrofula, Friedreich's ataxia, and alterations in the fields of vision. The latter subject is considered at great length. Special attention is devoted to the clinical significance and importance of these various alterations. Histories of numerous cases are given and the illustrations are very complete. The second part is devoted to syphilis and Asiatic cholera. Two pages are devoted to a most interesting discussion on anticholeraic inoculation. The system has been tested extensively upon animals, and a period of immunity of at least four months and a half has been obtained. Inoculation is reported in over fifty human subjects. The operation is abundantly proved to be harmless, but its effect in the prevention of cholera has yet to be demonstrated during an epidemic. The author is very sanguine as to the beneficial results to be expected. The third part is devoted chiefly to exophthalmic goître and acromegaly. The latter disease is extremely rare and has passed unrecognized until recently. It receives very careful attention and is profusely illustrated. Goître is treated of in a most satisfactory manner, and the illustrations are especially good. In this very important disease the author believes that there are five great primary symptoms—increased frequency of the heart's action, enlargement of the thyreoid, prominence of the eyeballs, muscular tremor, and general nervousness. All other symptoms are considered as secondary.

On the whole, the second volume fully maintains the high standard attained by the earlier portion of the work.

Essentials of Physics. Arranged in the form of Questions and Answers. Prepared especially for Students of Medicine. By Fred J. Brockway, M. D., Assistant Demonstrator of Anatomy at the College of Physicians and Surgeons, New York. Second Edition, revised. With One Hundred and Fifty-five Illustrations. Philadelphia: W. B. Saunders, 1894. Pp. ix–17 to 330. [Price, $1.] [*Saunders's Question Compends.*]

The author's additions have been of a practical character and are intended to make this edition up to the advances in physics. We know of no manual that affords the medical student a better or more concise exposition of physics, and the book may be commended as a most satisfactory presentation of those essentials that are requisite in a course in medicine.

Syphilis. Its Treatment by Intramuscular Injections of Soluble Mercurial Salts. By Edward Cotterell, F. R. C. S. Eng., etc., Surgeon (Out-Patients), London Lock Hospital, etc. London: John Bale & Sons, 1893. Pp. 36.

The author of this little brochure is one who has faith in the advantages of the intramuscular injection of mercury. He reviews the various soluble salts of mercury that have been used in this method of treatment. He prefers the sozoiodol of mercury, that was introduced by Schwimmer in 1892, which he administers in a solution containing iodide of sodium, and he states that it produces practically no local reaction. He does not make the injections into the subcutaneous tissue, but into the muscle substance, preferably of the gluteal region, and he recommends the employment of a platino-iridium needle for the hypodermic syringe.

He considers that injections made once a week for six or seven weeks, or until all skin and throat manifestations have disappeared, suffice for preliminary treatment, the injections being subsequently given fortnightly, and then monthly.

The author does not enter into any historical or critical review of this method of treatment, but rather contents himself with a presentation of the results of his own observation.

The Art of Massage. By A. Creighton Hale. Profusely illustrated with Original Drawings. London: The Scientific Press, Limited, 1893. Pp. xvi–144. [Price, 6*s.*]

The authoress briefly remarks on the antiquity and uses of massage, describes the qualifications necessary for a masseuse, the structure and functions of the body, the instruments and medicaments necessary for massage, the various manipulative procedures, and then in a number of chapters reviews the structure of a region or member and describes the varieties of massage that are most suitable, the final chapters of the volume being devoted to the treatment of various familiar diseases. Excellent illustrations of and directions for each of the varieties of massage are given. The volume is evidently written by one who is fully conversant with her subject, and it is an excellent manual.

The Blot upon the Brain. Studies in History and Psychology. By William W. Ireland, M. D., Edinburgh, formerly of H. M. Indian Army, etc. Second Edition. New York: G. P. Putnam's Sons, 1893. Pp. viii–388.

The fact that a second edition of this work has been published attests the popularity of the studies of a physician whose historical acquirements are equal to his attainments in psychiatry.

Dr. Ireland presents excellent reasons for believing that Mohammed and Joan of Arc were the victims of hallucinations, that Nero, Caligula, and Commodus were paranoiacs, and that many of the Roman emperors were the subjects of neuroses. His criticisms on the royal families of Spain and of Austria show the neurotic taint that accounts for many of their acts.

The author is a believer in the dual functions of the brain. "The intellectual faculties are double," he says, "both sides of the brain working at once, and each side having its impressions simultaneously registered."

The chapters on wordless thought, on *folie à deux*, and on unconscious cerebration are particularly interesting.

The volume is one that will prove as interesting to the lay as to the professional reader.

Die Beziehungen des Sehorgans und seiner Erkrankungen zu den übrigen Krankheiten des Körpers und seiner Organe. Von Dr. Max Knies, Professor a. o. an der Universität Freiburg i. B. Zugleich Ergänzungsband für jedes Hand- und Lehrbuch der inneren Medicin und der Augenheilkunde. Mit 21 Figuren im Texte. Wiesbaden: J. F. Bergmann, 1893. Pp. xi–484. [Preis, 9 Mark.]

A work on the relation of the visual organs and their diseases to general and organic diseases is one that has as much interest for the general practitioner as for the specialist.

The first section of this work is devoted to the disorders arising from diseases of the nervous system, both functional and organic. The second section refers to the various skin diseases that seem to influence visual disorders. The third section treats of the relation of diseases of the digestive system. The fourth relates to that of diseases of the respiratory organs; the fifth, to that of the organs of circulation; the sixth, to that of the kidneys; the seventh, to that of the sexual organs; the eighth, to that of poisons and of the infectious diseases; and the ninth, to that of constitutional anomalies, such as anæmia, chlorosis, leucæmia, diabetes, rhachitis, exophthalmic goître, and Addison's disease, etc.

The different topics are well considered, and the work deserves a wide popularity.

The Child Physically and Mentally. Advice of a Mother according to the Teaching and Experience of Hygienic Science. Guide for Mothers and Educators. By Bertha Meyer, author of *From the Cradle to the School*, and other works. Translated by Friederike Salomon. Revised by A. R. Aldrich. New York: M. L. Holbrook Co., 1893. Pp. x–155.

This is a useful book for any mother desirous of sound, practical advice regarding the physical and mental training of her child during its early years. The authoress is a disciple of Fröbel, and her book is based on the principles of his teaching.

We notice an error on page 23 in the statement that Lady Montagu had her children vaccinated from the real cow-pox; they were, as a fact, inoculated with small pox.

Handbook of Public Health and Demography. By Edward F. Willoughby, M. D. Lond. London and New York: Macmillan & Co., 1893. Pp. xvi–509. [Price, $1.50.]

The success that the author's *Principles of Hygiene*, originally published in 1884, attained has induced him to rewrite that work, making the additions necessary to change it from a semitechnical into a technical one.

One of the characteristics of the volume, to which the author refers in his preface, is the stress he places on the principles involved and the laws implied in each topic that is discussed.

The first section of the volume is devoted to dietetics, and includes an exposition of the doctrines and the latest conclusions of the Munich school, a concise statement of the changes in food stuffs produced by the various methods of cooking, and a brief review of some of the adulterations of food.

The sections on clothing, habits, exercise, and rest have been well considered.

The directions given for the examination of air and of water seem to be too meager for a work of this character; and the same criticism might be made regarding the methods to be employed for disinfection. Quarantine and municipal sanitation, as generic entities, are not mentioned.

What is given in the work is excellent, the author's style is pleasing and clear, and, aside from the small type that is trying to the eyes, the volume is to be commended.

The Treatment of Constitutional Syphilis. By Oswald Ziemssen, M. D., Wiesbaden. London: H. K. Lewis, 1893.

As the author very truly states in the preliminary portion of this little volume, the question of how constitutional syphilis can best be treated must be regarded as still open. He would amend Kaposi's statement that syphilis is "the *most easily curable* of all infectious constitutional diseases" by the simpler phrase "*syphilis is not incurable*"; or, in other words, and as a fundamental proposition in syphilology, "the radical cure of constitutional syphilis is possible, but there is as yet no certain proof of this at our disposal, relapses having occurred even after many years."

Dr. Zemssen objects to the contention that syphilis has been cured by the excision of the site of infection, because occasionally constitutional syphilis has been met with in cases where there has been no hard sore; so the fact that constitutional symptoms did not follow excision of a local lesion proves nothing. And yet, while calling attention to this element of uncertainty that is within the experience of every syphilologist, he urges the adoption of specific treatment as early as possible, because such treatment can do no harm, and it affords, at least, the moral satisfaction that nothing has been left undone.

The author rapidly reviews the expectant method of treatment, the diaphoretic and diuretic method, and the treatment by baths.

His treatment is with mercury; he says: "The longer and more energetically such treatment is carried out, the greater is the prospect of the patient being definitively cured." The various methods of administering mercury are reviewed, and the author prefers the inunction method with thermal treatment. Of course, for later symptoms the iodides are employed.

This little volume is an interesting *résumé* of the subject of the treatment of syphilis, rather confirming what is known than adding to our knowledge.

BOOKS, ETC., RECEIVED.

The Dispensatory of the United States of America. By Dr. George B. Wood and Dr. Franklin Bache. Seventeenth Edition. Thoroughly revised and largely rewritten. With Illustrations. By H. C. Wood, M. D., LL. D., Professor of Materia Medica, etc., in the University of Pennsylvania, etc.; Joseph P. Remington, Ph. M., F. C. S., Professor of Theory and Practice of Pharmacy in the Philadelphia College of Pharmacy, etc., and Samuel P. Sadler, Ph. D., F. C. S., Professor of Chemistry in the Philadelphia College of Pharmacy. Philadelphia: J. B. Lippincott Company, 1894. Pp. xliv–1930.

An American Text-book of the Diseases of Children. Including special chapters on Essential Surgical Subjects; Diseases of the Eye, Ear, Nose, and Throat; Diseases of the Skin; and on the Diet, Hygiene, and General Management of Children. By American Teachers. Edited by Louis Starr, M. D., Physician to the Children's Hospital, etc., Philadelphia. Assisted by Thompson S. Westcott, M. D., Attending Physician to the Dispensary for Diseases of Children, Hospital of the University of Pennsylvania. Philadelphia: W. B. Saunders, 1894. Pp. xiv–1190. [Price, $7.]

Essentials of Physics. Arranged in the form of Questions and Answers. Prepared especially for Students of Medicine. By Fred J. Brockway, M. D., Assistant Demonstrator of Anatomy at the College of Physicians and Surgeons, New York. Second Edition, revised. With One Hundred and Fifty-five Illustrations. Philadelphia: W. B. Saunders, 1894. Pp. ix–17 to 330. [Price, $1.] [*Saunders's Question Compends.*]

Syllabus of the Obstetrical Lectures in the Medical Department of the University of Pennsylvania. By Richard C. Norris, A. M., M. D., Demonstrator of Obstetrics, University of Pennsylvania, etc. Third Edition. Philadelphia: W. B. Saunders, 1894. Pp. xviii–222. [Price, $2.]

Congenital Affections of the Heart. By George Carpenter, M. D., London. Member of the Royal College of Physicians, etc. London: John Bale & Sons, 1894. Pp. 103. [Price, 3*s.* 6*d.*]

The Discovery of Modern Anæsthesia. By Whom was it Made? A Brief Statement of Facts. By Dr. Laird W. Nevius, Specialist in the Administration of Nitrous Oxide Gas for Minor Surgery, etc. New York, 1894. Pp. 100.

Transactions of the American Pediatric Society. Fifth Session. Held at West Point, N. Y., May 24, 25, and 26, 1893. Volume V.

Twenty-fourth Annual Report of the Massachusetts Homœopathic Hospital, Boston, and the Ladies' Aid Association, for the Year ending December 31, 1893.

The Twenty-first Regular Report of the Medical and Surgical Staff of St. Francis's Hospital, Jersey City, for the Year 1893.

Society of the Lying-in Hospital of the City of New York. (Midwifery Dispensary.) Medical Report for 1893.

Clinical Contributions. By Henry D. Noyes, M. D. [Reprinted from the *New York Eye and Ear Infirmary Reports.*]

Aphthæ and Diphtheria; their Association and Differentiation. By Adolph Rupp, M. D. [Reprinted from the *American Journal of Obstetrics.*]

A Text-book on Diseases of the Eye. By Henry D. Noyes, A. M., M. D., Professor of Ophthalmology and Otology in Bellevue Hospital Medical College, etc. Second and Revised Edition. Illustrated by Five Chromo-lithographic Plates, Ten Plates in Black and Colors, and Two Hundred and Sixty-nine Wood Engravings. New York: William Wood & Co., 1894. Pp. xvii–816.

Anomalies of Refraction and of the Muscles of the Eye. By Flavel B. Tiffany, M. D., Professor of Ophthalmology and Otology in the University Medical College of Kansas City, Mo., etc. Author's Edition. Kansas City: Hudson-Kimberly Publishing Co., 1894. Pp. viii–7 to 307.

Tables and Notes on Human Osteology, for the Use of Students of Medicine. By Sebastian J. Wimmer, M. A., M. D., Member of the Metropolitan Medical Society, etc. With a preface by Professor William F. Waugh, A. M., M. D., Professor of Clinical Medicine, Chicago Post-graduate College, etc. Philadelphia: The Medical Publishing Co., 1894. Pp. 239. [Price, $1.50.]

Asepsis in der Gynäkologie und Geburtshülfe. Von Dr. M. Sänger, ausserordentlicher Professor an der Universität Leipzig, und Dr. W. Odenthal, in Hannover, früher Assistenzarzt an Professor Sänger's Heilanstalt. Mit 2 Tafeln und 42 Abbildungen im Text. Leipzig: C. G. Naumann. Pp. vi–128.

The Pathology of Locomotor Ataxy. By Sydney Kuh, M. D., Chicago. [Reprinted from the *Medical News.*]

Achievements of Sanitation. Measured by Vital Statistics. By George E. Willitts, Lansing, Mich. [Reprinted from the *Proceedings of the Sanitary Convention.*]

Transactions of the Medical Society of the State of North Carolina. Fortieth Annual Meeting, held at Raleigh, N. C., May 9, 10, and 11, 1893.

Roosevelt Hospital, New York. Twenty second Annual Report, from January 1, 1893, to December 31, 1893.

Seventh Annual Report of St. Margaret's Hospital of Kansas City, Mo., for the Year ending December 31, 1893.

Das Alkoholsiechthum und die Kurzlebigkeit des modernen Menschengeschlechts. Von Dr. med. Robert Koppe in Moskau.

Ueber mucinartige Bestandtheile der Neurofibrome und des Centralnervensystems. Von P. G. Unna. [Sonder-Abdruck aus *Monatshefte für praktische Dermatologie.*]

Arbeiten aus Dr. Unna's Klinik fur Hautkrankheiten in Hamburg, 1892–1893. Herausgegeben von Dr. P. G. Unna. [Sonder-Abdruck aus der *Berliner klinischen Wochenschrift.*]

The Effect of Dilute Solutions of Chromic Acid and Acid Urine upon the Red Blood-corpuscles of Man. By M. L. Holbrook, M. D.

The Diagnosis of Mitral Valvulitis, with a Report of Three Cases. By Judson Daland, M. D. [Reprinted from the *International Clinics.*]

Hysterical Seizures relieved by Hypnotic Suggestion. By Judson Daland, M. D. [Reprinted from the *University Medical Magazine.*]

In Memoriam. John M. Keating, M. D., LL. D. By Judson Daland, M. D., Philadelphia. [Reprinted from the *International Clinics.*]

Surdité très ancienne dependant de l'obstruction des trompes d'Eustache. Guérison en quelques jours. Par le Dr. Hovent (de Bruxelles).

A Text-book of the Diseases of Women. By Henry J. Garrigues, A. M., M. D., Professor of Obstetrics in the New York Post-graduate Medical School and Hospital; Gynæcologist to St. Mark's Hospital in New York City, etc. Containing Three Hundred and Ten Engravings and Colored Plates. Philadelphia: W. B. Saunders, 1894. Pp. 17–19 to 690. [Price, $4]

Lectures on Surgery. By David W. Cheever, A. B., M. D. (Harv.), Professor of Surgery, Emeritus, in the Medical School of Harvard University; Senior Surgeon of the Boston City Hospital, etc. Boston: Damrell & Upham, 1894. Pp. viii to 591.

Burdett's Hospital and Charities Annual, 1894. Containing a Review of the Position and Requirements, and Chapters on the Cost of Management, of the Voluntary Charities, and an Exhaustive Record of Hospital Work for the Year, etc. Edited by Henry C. Burdett, Author of *Hospitals and Asylums of the World*, etc. London: The Scientific Press (Limited), 1894. Pp. cccxxviii to 522. [Price, 5*s.*]

Lectures on Genito-urinary Diseases. By J. C. Ogilvie Will, M. D., C. M., F. R. S. E., Consulting Surgeon to the Aberdeen Royal Infirmary, etc. With Numerous Illustrations. London: The Scientific Press, 1894. Pp. viii–152. [Price, 6*s.*]

A Manual of Therapeutics. By A. A. Stevens, A. M., M. D., Lecturer on Terminology and Instructor in Physical Diagnosis in the University of Pennsylvania, etc. Philadelphia: W. B. Saunders, 1894. Pp. 17 to 435. [Price, $2.25.]

A Primer of Psychology and Mental Disease. By C. B. Burr, M. D., Medical Superintendent of the Eastern Michigan Asylum, etc. Detroit: George S. Davis, 1894. Pp. vi–104. [Price, $1.]

Transactions of the American Orthopædic Association. Seventh Session, held at St. Louis, Mo., September 19, 20, and 21, 1893. Volume VI.

A New Dynamometer for Use in Anthropometry. By J. H. Kellog, M. D. [Reprinted from *Modern Medicine.*]

Three Years' Experience with the Electrical Treatment of Fibroid Tumors of the Uterus. With a Report of Forty-four Cases. By W. L. Burrage, A. M., M. D., Boston, Mass. [Reprinted from the *American Journal of Obstetrics.*]

Sixteenth Annual Report of the Presbyterian Eye, Ear, and Throat Charity Hospital, Baltimore, Md.

The Society of the New York Hospital. One Hundred and Twenty-third Annual Report, for the Year 1893.

The Application of Graphics to the Fœtal Heart Sounds. By Hugh Hamilton, M. Sc., M. D., Harrisburg, Pa. [Reprinted from the *American Journal of Obstetrics.*]

The Cause and Cure of Malignancy. An Important Announcement to the Medical Profession. By William Thornton, Boston, Mass.

Contributo allo studio di una nuova modalita della sensibilita cutanea (sensibilita igrica). Del Dott. Ruggero Tambroni. [Memorie della *Academia delle scienze mediche e naturali in Ferrara.*]

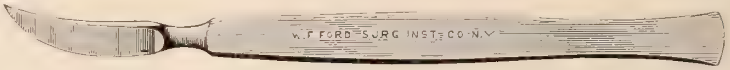
Reports of the Trustees and Superintendent of the Butler Hospital for the Insane, presented to the Corporation at its Fiftieth Annual Meeting, January 24, 1894, Providence, R. I.

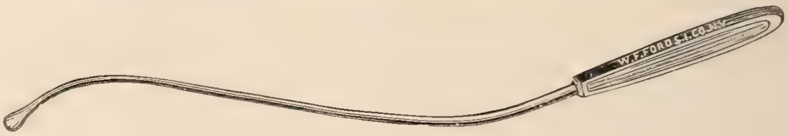
New Inventions, etc.

A KNIFE AND SOUND FOR ANTERIOR VAGINAL FIXATION.

By Hiram N. Vineberg, M. D.

The surgical treatment of backward displacements of the uterus has engaged the profession for the past years. Many have been the operations ingeniously devised for the relief of this very common affection. Some have stood the test of time, the majority have been buried in oblivion. Still, so unsatisfactory is the treatment in general by mechanical means that the most conservative men nowadays resort to some one or other surgical procedure to fix the displaced uterus forward. Even so ultra-conservative a man as Fritsch has been compelled to resort to ventro-fixation fifteen times in one year in his hospital practice. This operator is still a firm believer in the use of pessaries, but he tells us he was forced to adopt the more radical measure from his unsatisfactory experience in treating the working and middle classes with mechanical supports. When the abdomen has to be opened for some other lesion, the consensus of opinion at the present time is in favor of ventro-fixation; but when the backward displacement is not complicated by diseased annexa, as is often the case, a less serious operation is in place. Of these the one that seems to have the most promise in it, and is attended with the least objections, is anterior vaginal fixation, or Mackenrodt's operation. I believe I was among the first in this country to perform the operation successfully. I have now done the operation nine times, and will say here incidentally that in properly selected cases it is the operation *par excellence.* At my first operation I happened to have with me an ordinary staphylorrhaphy knife, which seemed to answer the purpose of making the longitudinal incision and separating the vaginal flaps better than any other scalpel I had in my possession. Its only objection was its small size. I had, therefore, W. F. Ford & Co. construct for me a larger knife after the same pattern, which I have since been using with a great deal of satisfaction. The convexity of the blade is useful in entering nicely into the concavity existing in the anterior vaginal wall, even when this is put on the greatest stretch by two volsellæ, one caught in the cervix, the other in the urethral mound. This form of the blade is also useful in making the sharp dissections of either vaginal flap from the underlying bladder, and the handle, being of smooth metal and quite thin, comes into good service in making the blunt dissections in this step of the operation and also in the next step of bluntly dissecting the bladder from the cervix and uterus.





At my first operation I used the largest uterine sound I could obtain in the city to bring the uterus forward. Although the case was the easiest I have met with, I had great difficulty in keeping the uterus anteverted with the sound, as it was too flexible and too short, and the handle was too small to enable me to catch a good hold on it. I had therefore this sound constructed. As will be seen, it is much longer than the ordinary uterine sound, is very much heavier, has a good-sized handle which can be firmly grasped, and has a large knob at its end, so as to avoid the danger of penetrating the uterine wall, which a sound without a knob might do. In fact, an operator in this city, in using an ordinary steel bougie to antevert the uterus, did penetrate the uterus and open into the peritoneal cavity, and was compelled to open the abdomen. The sound is made of copper wire and is consequently slightly flexible. It measures from tip to shank twenty-five centimetres, and to the end of the handle thirty-five centimetres. The circumference of the knob is twenty-two millimetres, and two inches and a half below this point the circumference is seventeen millimetres and a half. It is curved at its upper end to correspond to the direction of the anteverted uterus, and the curve at the lower end is to allow the handle to be brought farther back than it would if it were straight.

I have used this sound in the last six operations and have found it exceedingly satisfactory, as it facilitates the execution of the operation.

127 East Sixty-first Street, *March 13, 1894.*

Miscellany.

The Association of Military Surgeons of the United States will hold its fourth annual meeting in Washington, on May 1st, 2d, and 3d, under the presidency of Dr. Nicholas Senn, of Chicago, surgeon general of the National Guard of the

State of Illinois. Besides the president's address, entitled Abdominal Surgery on the Battlefield, the preliminary programme includes the following papers on The Transportation of the Sick and Wounded: History, by Colonel C. H. Alden, Assistant Surgeon General, U. S. A., Washington; Litter, by Major Valery Havard, Surgeon, U. S. A., Fort D. A. Russell, Wyoming; Travois, by Major John Van R. Hoff, Surgeon, U. S. A., Governor's Island, New York; Railway, by Colonel Louis W. Read, Surgeon General, N. G., Pa., Norristown, Pa.; On Board Ship, by Dr. Albert L. Gihon, Medical Director, U. S. N., Washington; and Ambulance, by First Lieutenant Myles Standish, Surgeon, Mass. V. M., Boston; also miscellaneous papers as follows: Notes on the Introduction of Tent Field Hospitals in War, showing the Advantages of Treating Military Invalids under Canvas on the Battlefield, instead of Buildings improvised for Hospitals, by Colonel B. J. D. Irwin, Assistant Surgeon General, U. S. A., Chicago; The Medical Officer at the Summer Encampments, by Lieutenant-Colonel C. R. Greenleaf, Deputy Surgeon General, U. S. A., San Francisco; Easy Methods of Carrying out the Principles of Aseptic Surgery, by Colonel R. Reyburn, Late Surgeon and Brevet Lieutenant Colonel, U. S. Vols., Washington; Equipment and Instruction of Sanitary Soldiers, by Captain C. F. Mason, Assistant Surgeon, U. S. A., Fort Snelling, Minnesota; A Field Kitchen Wagon for Cooking Food and Sterilizing Dressings at Dressing Stations and on the March, by Captain H. O. Perley, Assistant Surgeon, U. S. A., Plattsburg Barracks, New York; The Personal Equipment of the Sanitary Soldier, by First Lieutenant G. D. DeShon, Assistant Surgeon, U. S. A., Fort D. A. Russell, Wyoming; The Action of Rattlesnake Venom upon the Bactericidal Power of the Blood Serum, by Captain Charles B. Ewing, Assistant Surgeon, U. S. A., Fort McHenry, Maryland; The Relation of the National Guard Surgeon to the Medical Profession and to the Community, by Captain T. C. Clark, Assistant Surgeon, N. G. of Minnesota, Stillwater, Minn.; Saber Wounds, by Colonel R. E. Giffen, Surgeon General, N. G., Neb., Lincoln, Neb.; The Special Training of the Medical Officer, with Brief Notes of the Courses of Instruction at Army Schools Abroad and at Home, by Colonel C. H. Alden, Assistant Surgeon General, U. S. A., Washington; A New Sanitary Appliance in the First Line of Battlefield Assistance, by Major John Van R. Hoff, Surgeon, U. S. A., Governor's Island, New York; Some Notes on the Late Civil War, by Colonel Richard F. Michel, Surgeon General, Alabama State Troops, Montgomery, Ala.; Destructive Effects of the Krag-Jorgensen Rifle Projectile at the Actual Ranges, by Captain Louis A. La Garde, Assistant Surgeon, U. S. A., Denver, Col.; Camp Hospitals, by Major Lawrence C. Carr, Surgeon, N. G. Ohio, Cincinnati; Progress of Medico-Military Science in the National Guard of New Jersey, by Brigadier-General J. D. McGill, Surgeon General, N. G. of New Jersey, Jersey City; The Remote Effects of Gunshot Wounds of the Extremities, by Lieutenant-Colonel C. M. Woodward, ex-Surgeon General, Michigan State Troops, Tecumseh, Mich.; Notes on the Transportation of Sick and Wounded, by Captain J. D. Glennan, Assistant Surgeon, U. S. A., Fort Sill, Oklahoma Territory; Case of Gunshot Wound of the Liver, with Remarks on Liver Wounds Antiseptically Treated, by Captain G. E. Bushnell, Assistant Surgeon, U. S. A., Fort McKinney, Wyoming; The Treatment of Gonorrhœa in Military Practice, by Major G. Frank Lydston, Surgeon, Illinois N. G., Chicago, and a Description of a New Litter, by Captain Francis J. Ives, Assistant Surgeon, U. S. A., Fort Sheridan, Illinois.

A Case of Post-mortem Perforation of the Stomach.—The March number of the *Archives de médecine et de pharmacie militaires* contains an article by M. Leymarie in which he remarks that post-mortem perforation of the stomach is a rare thing in pathological anatomy. The causes of this self-digestion of the walls of the stomach still remain a mystery, he says, and if, as in the cases observed by Professor Brouardel, a superabundant secretion of the gastric juices following the ingestion of strychnine may be cited, there are others where the cause of the perforation is not known. In a case described by Dr. Vibert before the *Société de médecine légale* the diaphragm itself was perforated and the contents of the stomach were discharged into the left pleura. M. Leymarie had observed a case of post-mortem perforation of the stomach at the Military Hospital at Dey, in the service of M. Peyret. The patient was a young man who had been wounded in a street fight, and died forty-eight hours after the accident. There was a flow of serum from the left ear, and a slight paralysis of the left side of the face confirmed the diagnosis of fracture of the base of the skull. The gravity of the lesions ascertained at the autopsy was a surprise. The body was that of a young and vigorous man and showed no signs of putrefaction, but the sero-sanguineous flow still continued from the ear. An examination of the skull revealed the following lesions: A large clot extending over the base of the dura and elevating the cerebral substance; attrition of the cortical zone of the posterior part of the left lobe, and smaller lesions of the right lobe. On raising the dura a large fracture was discovered; beginning at the left foramen rotundum, the tract of the fracture extended along the anterior border of the petrous portion of the temporal bone, crossed this bone perpendicularly to its axis, and traveled obliquely the whole extent of the occipital in the direction of the internal occipital protuberance, before which it deviated slightly and involved the superior angle of the left parietal. In the thoracic cavity nothing was noticed about the heart or the right lung, but the left lung showed a brownish spot on its diaphragmatic face. Apparently there was nothing abnormal in the abdominal cavity, and there was no peritonitis, but after the small intestine had been carefully depressed and the transverse colon slightly raised, a loss of substance as large as one's hand was discovered on the lower side of the diaphragm, on the left, involving the whole thickness of the muscle except the superior aponeurosis, the dull color of which had already been noticed on opening the thorax. The diaphragmatic muscular tissue had disappeared, and there remained only fibrous fasciculi resembling tow, which covered the bottom of the ulcer. At this level the large *cul-de-sac* of the stomach showed a perforation nearly ten centimetres in diameter; it was irregular and extended nearly to the cardia, and the edges were rather clean-cut. At certain points a very narrow greenish border could be seen. The walls of the stomach were in good condition, and there was no trace of alteration of the mucosa or of ulceration. The cavity was empty. The posterior cavity of the omentum contained a teaspoonful of a brownish liquid, but the signs of digestion, nearly finished, of the diaphragm and the absorption of the lungs showed that the quantity of liquid discharged must have been great.

The Vagabonds' Disease.—A correspondent of the *Journal des praticiens* gives an account of a recent clinical lecture given in Algiers by Dr. Raynaud on the subject of the diagnosis of the condition called by the English the "vagabonds' disease," a morbid condition that has only rarely been described, he says, in spite of its comparative frequency. It is a cachexia accompanied with pigmentation of the mucous membranes, pigmentation of the skin, and prurigo due to lousiness. The case on which M. Raynaud lectured was that of a person who had rebellious diarrhœa and was in a state of extreme cachectic misery. The skin of his loins, his buttocks, and his abdomen was bronzed and melanodermic. There was a brownish-yellow pigmentation of the lips, of the cheeks, and of the palate, with prurigo. Traces of phtheiriasis were found.

What diagnosis was to be made under such circumstances? To settle this question, M. Raynaud thought the best course to pursue was to raise and discuss the following hypotheses: The absence of malarial antecedents and signs put aside the idea of malarial melanodermia, also that of pigmentation caused by the use of nitrate of silver. Moreover, no one would suppose that the case was one of Addison's disease. This disease, however, was the affection from which the one under consideration had to be distinguished. The two resembled each other in the tegumentary pigmentation and in the cachectic condition. It was true that in Addison's disease, pigmentation was most pronounced on the parts that were usually uncovered, such as the neck, the hands, and the face, or were normally pigmented, such as the axillæ, the groins, and the scrotum. The melanodermia of vagabonds' disease was situated on those parts where there had been itching and scratching—the back, the hypochondrium, and the abdomen. It was quite exceptional for it to be found on the mucous membranes. In the long run, it was wise to rest the diagnosis on the localization of this pigmentation in cases where the phenomena of cachexia and asthenia were of a nature to give rise to doubt. In this abnormal cutaneous pigmentation the lecturer saw not only an effect of scratching and of lousiness, but that of poisons carried in the blood and irritating the nerves presiding over the function of pigmentation. Vagabonds' disease, therefore, he concluded, was a skin disease of tropho-neurotic origin; hence its clinical difference from Addison's disease. It was to be treated, and almost always successfully, by means of baths and a tonic regimen.

Appendicitis Obliterans.—In the *Journal of the American Medical Association* for March 24th Dr. N. Senn, of Chicago, publishes an article on this subject and gives the following conclusions:

1. Appendicitis obliterans is a comparatively frequent form of relapsing inflammation of the appendix vermiformis.

2. It is characterized by progressive obliteration of the lumen of the appendix, by the gradual disappearance of the epithelial lining and glandular tissue, and the production of granulation tissue from the submucous connective tissue which by transformation into connective tissue and cicatricial contraction starves out remnants of glandular tissue, and finally results in obliteration.

3. The obliterating process manifests a progressive tendency, and may finally result in complete destruction of all glandular tissue and obliteration of the entire lumen.

4. The incipient pathologic changes occur either in the mucous membrane of the appendix, in the form of superficial ulceration, or as an interstitial process following lymphatic infection.

5. The most constant symptoms which attend this form of appendicitis are relapsing acute exacerbations of short duration, moderate or no appreciable swelling at the seat of disease, and persistence of soreness and tenderness in the region of the appendix during the intermissions.

6. The process of obliteration may begin at the distal or proximal end, or at any place between, or it may commence simultaneously, or in succession at different points.

7. Obliteration on the proximal side gives rise to retention of septic material which finds an outlet through the lymphatics, giving rise to non suppurative lymphangitis and lymphadenitis.

8. Circumscribed plastic peritonitis is an almost constant concomitant of appendicitis obliterans and hastens the process of obliteration.

9. Complete obliteration of the lumen of the appendix results in a spontaneous and permanent cure.

10. In view of the prolonged suffering incident to a spontaneous cure by progressive obliteration and the possible dangers attending it, a radical operation is indicated and should be resorted to as soon as a positive diagnosis can be made.

The Association of the Alumni of St. Mary's Hospital, Brooklyn.—The annual meeting will be held at the rooms of the Medical Society of the County of Kings, No. 356 Bridge Street, on April 16th, at 2.30 P. M. All the members of the profession are cordially invited to be present. The following papers are announced: Pelvic Abscess and its Treatment, by Dr. A. H. Buckmaster, of New York; Sources of Error in Vital Statistics, by Dr. George E. West; Cystitis from a Surgical Standpoint, by Dr. L. E. Tieste; and The Therapeutics of Digitalis in the Pneumonia of Children, by Dr. Frank De la Vergne. The annual dinner will be held at the Union League Club in the evening.

The New York Academy of Medicine.—The programme for the last general meeting, on Thursday evening, the 5th inst., included the following papers: Appendicitis, strictly a Surgical Disease, by Dr. John A. Wyeth; and The Use of Narcotics in the Treatment of Epilepsy, with Special Reference to the Use of Opium, by Dr. Joseph Collins.

At the next meeting of the Section in General Surgery, on Monday evening, the 9th inst., Dr. John B. Walker will read a paper on Rupture of the Quadriceps Extensor Muscle and its Tendon; an Analysis of 252 Cases, with reference to Treatment and Results; and the discussion on sterilization will be continued.

At the next meeting of the Section in Genito-urinary Surgery, on Tuesday evening, the 10th inst., Dr. George H. Fox will read a paper entitled Some Common Mistakes in the Treatment of Syphilis.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 12th inst., the subject of cerebro-spinal meningitis will be discussed.

At the next meeting of the Section in Neurology, on Friday evening, the 13th inst., papers are to be read as follows: Haig's Theory of Uric Acid, by Dr. Mary P. Jacobi; Perforating Necrosis of the Spinal Cord, by Dr. Ira Van Gieson; and The Significance of the Ankle Clonus and Exaggerated Knee-jerk, and their Relation to Diagnosis, by Dr. Græme M. Hammond.

The Philadelphia Pathological Society.—The semi-annual conversational meeting will be held in the upper hall of the College of Physicians building, Thirteenth and Locust Streets, on Thursday, April 26th, at 8 P. M. Dr. Simon Flexner, associate in pathology in the Johns Hopkins University Medical School, will deliver an address entitled An Experimental Study of the Nature and Action of Certain So-called Toxalbumins. Members of the medical profession are cordially invited to be present.

The Mutter Lectures.—Dr. Guy Hinsdale, the curator of the College of Physicians of Philadelphia, asks us to announce that the next course, on Some Point or Points connected with Surgical Pathology, will be given in the winter of 1896–'97. The lecturer's compensation will be $600, and the appointment is open to the profession at large. Applications, stating the subjects of the proposed lectures, must be made before July 1, 1894, to Dr. William Hunt, Southeast Corner of Thirteenth and Locust Streets, Philadelphia.

THE NEW YORK MEDICAL JOURNAL, April 14, 1894.

Original Communications.

ELÆOMYENCHYSIS,

OR THE TREATMENT OF CHRONIC LOCAL SPASM BY THE INJECTION AND CONGELATION OF OILS IN THE AFFECTED MUSCLES.

HISTORY OF A CASE OF CLONIC SPASM OF THE SPLENIUS MUSCLE TREATED SUCCESSFULLY IN THIS WAY.

By J. LEONARD CORNING, A. M., M. D.

One of the most thankless tasks which confront the neurologists is the treatment of spasm, whether due to purely local causes, as in the various convulsive affections involving the muscles of the neck, or to central lesions, as exemplified by the contractures consecutive to hemiplegia.

To enumerate all that has been attempted for the relief of these conditions could serve no useful purpose, since the exhibit would only impress one with the chaotic state of this branch of neurotherapy. I shall summarize matters, then, by stating that most sedative and stimulating drugs have been exhibited internally in all possible doses, while locally incision, acupuncture, electricity, and counter-irritation have alternately played the principal part. Not much of a practical kind has come of all this polytherapy, and still less has been gained by interminable discussion as to whether this or that particular spasm is to be ascribed to central or purely peripheral causes.

The realization of this came to me many years ago, and I can not, even now, forbear a smile as I recall the many grotesque attempts to relieve convulsive conditions of the muscles of which at various times I have been a witness.

With this experience has come the conviction that if we are to deal effectively with these local spasms we must begin with the muscle itself, addressing our efforts as far as possible to diminishing the morbid irritability of the contractile substance, on the one hand, and to directly impeding the action of the organ on the other. From the consideration of a variety of phenomena, some of which seemed at first quite irrelevant, it one day dawned upon me that these two ends—*i. e.*, diminution of the irritability of the contractile substance and fixation or partial fixation of the organ in a condition of extension might be attained by the injection into the muscle and subsequent congelation there—by the aid of cold—of a bland oil, the solidification point of which should be three or four degrees above the normal blood temperature.

In the first place, I knew not only theoretically but inductively, from experiments on myself and others, that a non-irritating oil might be injected in a melted (fluid) condition into the living tissues, congealed there, and allowed to remain as a solid or semi-solid foreign body for an indefinite length of time without provoking the least inflammatory reaction. With this elementary fact I was able to bring into juxtaposition the apparently quite unrelated but well-established phenomenon that the vigor of muscular action may be sensibly diminished by curtailing the blood-supply to the organ. As these two facts surged to and fro in my mind, bound by some illusive co-ordination, their true connection dawned one day suddenly upon me. Then, as I now recall the circumstance, I said to myself: "To be sure, I will inject melted oil into a spastic muscle at the first opportunity in sufficient quantity to interfere materially with the blood-flow and metabolism in the organ, and then solidify it (the oil) there by the aid of cold. In this way, in addition to interfering with the nutrition of the organ, I shall be able to directly curtail (mechanically) its action; for the hardened oil can not fail to act as a species of intramuscular splint." Though I had occasion over two years ago to make a successful test of this method in a small way in connection with spasm of the muscles of the thumb, only recently have I enjoyed the opportunity of employing it on a large scale. For this privilege I am indebted to Dr. Mortimer Lampson, of Jersey City.

During the latter part of March I was summoned in consultation by Dr. Lampson to give an opinion in the case of a young man who, for the past four months, had suffered continuously from clonic spasm, which was confined to the muscular region of the neck. Within the first fifteen minutes subsequent to my arrival at the bedside the patient had four violent convulsive attacks, accompanied by severe pain; and, availing myself of the opportunity thus afforded to make a thorough inspection, I was able to locate the spasm in the left splenius muscle. While the seizure was at its height the head was drawn violently backward and toward the left (affected) side, the chin remaining somewhat depressed and inclined toward the side of the spasm. Meanwhile the characteristic hard ridge could be felt which marked the protrusion of the rigid splenius beyond the border of the trapezius.

Simultaneously with the advent of the spasm, the patient would seize his head with both hands, and, mustering all his strength, endeavor to control the violent jerking of the head; but the effort was not always successful. As may readily be imagined, clonic spasms of such violence and frequency, lasting several months, and accompanied by severe pain, must have caused nervous and nutritive derangements of a profound character.

Appreciating the gravity of the situation, Dr. Lampson had made faithful trial of all the remedies, both local and general, commonly employed in such cases, but had been unable to modify the frequency or intensity of the spasm. Indeed, the only respite from suffering was had through the instrumentality of opiates.

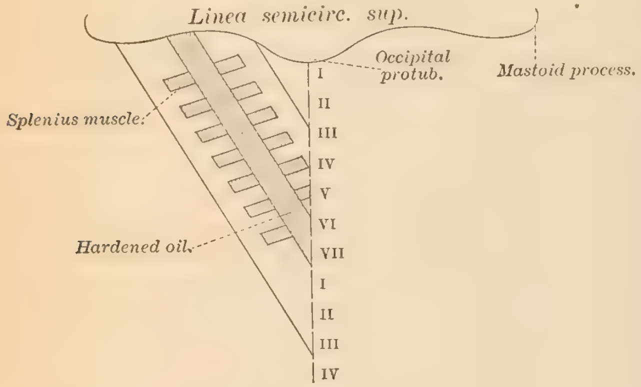
Confronted by this serious state of affairs, I proposed that we should make a final effort to relieve the patient before invoking the assistance of surgery.

Dr. Lampson consenting, I proceeded to treat the affected muscle in the following manner:

Having procured a suitable oil, the point of solidification of which was somewhat higher than that of the blood temperature, I reduced it (the oil) to a fluid condition by heating over a water bath.

The oil of theobroma mixed with paraffin was found to yield a non-irritating and otherwise suitable product. The melting point was accurately determined by the gradual addition of paraffin in the presence of the thermometer. By the aid of a large syringe armed with a stout hollow needle, I injected eight hundred minims of the melted oil into the center of the muscle, in such a way that it (the oil) was distributed parallel with the longitudinal axis of the muscle. The fluid oil was then promptly reduced to a solid state by the aid of the ether spray, and subsequently by the application of a small ice-bag over the muscle. The fact that the oil remains solid at the blood temperature will prevent its deportation by the general circulation after the removal of the ice-bag.

In this way a retinaculum or intramuscular splint of hardened fat was formed, extending almost the entire length of the muscle. Some hours subsequently, there being no inflammatory reaction whatever, supplementary injections were made in such a way as to form "ribs" or fatty segments extending across the muscle at right angles to the longitudinal splint of hardened fat, if I may so express it. The oil was then precipitated as before, by the external application of cold to the muscle. The disposition of the fat in the muscle is approximately shown in the subjoined diagram.



Though I confidently expected that good would come from this plan of treatment within a reasonable length of time, I was not prepared for the exceeding promptness of the relief afforded. Indeed, to my surprise, the clonic spasms ceased immediately after the conclusion of the operation; and, in their stead, there remained nothing more than a certain degree of morbid tonicity of the muscle. During the last few days this stiffness has been decidedly less pronounced, so that the tendency of the head to be drawn in the direction of the affected muscle is insignificant and entirely absent at times.

In view of the striking results so speedily accomplished, I can not restrain the conviction that eventually, with the more complete development of atrophic changes in the muscle due to the presence of the oil, the relaxation of the organ may be thoroughly accomplished. As matters stand at present, there is absence of pain; the head is maintained in a normal position; the patient can sleep on the affected side without discomfort, which he has been unable to do heretofore; his appetite has increased notably, and his general bodily condition is improved.

Let me add a word of advice in regard to the best manner of making the injections. In the first place they should be made while the muscle is extended as much as possible, so that the fat deposited may interfere most effectually with the contraction of the organ. To accomplish this, I should not hesitate to etherize the patient; but this is unnecessary in the case of clonic convulsions, and probably urgently demanded only where we are confronted with severe tonic spasm. A second important point is to distribute the oil with regularity throughout the affected muscle, beginning at the origin and continuing the injections till one or more zones of considerable thickness extend to the insertion of the muscle. Moderate massage of the injected parts will greatly facilitate this part of the operation.

The transverse injections may then be undertaken in the manner previously set forth.

Let me also observe parenthetically that it is necessary to employ a hypodermic needle of large size provided with an ample lumen, as the hot and heavy oil is liable to congeal in the small needles conventionally employed for purposes of hypodermic medication. The syringe, too, should be of at least two hundred minims capacity; must be heated to 110° F. before filling; and, with its needle attached, should be kept in hot water of a like temperature till the very moment of making the first injection. Should the oil, in spite of these precautions, congeal in the needle, dipping the latter in hot water will at once clear the lumen.

Finally, it is well not to attempt to accomplish too much at one sitting, but to rely upon supplementary injections undertaken at intervals of three or four days. It must not be forgotten, however, that, in order to obtain success, a large quantity of oil must ultimately be injected. Should there be some local soreness after the operation, the ice-bag may be allowed to remain in place over the muscle for a few hours. As a rule, however, it should be replaced as soon as possible by a bag of moderately warm water, which often proves most comforting, and tends to cause relaxation of the organ. In this connection, I would remark, as a matter of collateral interest, that I once completely arrested the growth of a small tumor which was pressing upon the supraorbital nerve, and giving rise to considerable pain, by injecting oil into and in the vicinity of the neoplasm, and congealing it permanently by cold, as previously described. The relief from pain was likewise permanent.

To those who have been impressed not only by our inadequate knowledge of the mechanism of spasm, but also by the utter unreliability of the means hitherto proposed for dealing with it, the foregoing observations will, I trust, prove not without interest.

53 West Thirty-eighth Street.

THE PREVENTION OF DISEASE:

A PROBLEM FOR ALL PHYSICIANS.*

By WILLIAM WARREN POTTER, M. D.,
BUFFALO, N. Y.

INTRODUCTION.

The highest office of the physician of modern times is and ever must be in the exercise of his functions toward the prevention of disease. This is neither new nor original, but is nevertheless as true as when it was first uttered in reference to modern physicians and modern medicine.

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* Read by invitation before the New York Academy of Medicine, February 1, 1894.

In a medical society meeting it is far more entertaining and even fascinating to describe a brilliant clinical success, either in surgery or medicine, than it is to discourse upon the methods of prevention as applied to the maladies of mankind. But it would be unseemly to address this academy in general session assembled—composed as it is of men who are distinguished in all the specialties of their art—upon any one branch thereof, expecting to attract either the ear or the thought of anything like a considerable number, to say nothing of a majority. But every one is or ought to be interested in the prevention of disease. Moreover, the time has fully come for the discussion, in all medical societies by all medical men, of the manifold questions relating to preventive medicine.

The problems that are involved in this department of medicine must interest the general practitioner whether of medicine or surgery; likewise all specialists in the several departments and branches of medical science and art; nor can the laboratory teacher, whether he be chemist, pathologist, physiologist, or bacteriologist, escape the necessity of a knowledge of how to prevent the diseases whose infection and contagion he is absorbed in studying and analyzing. What man is there who bears the honorable title of "Doctor of Medicine," no matter what his specialty in teaching or practice, who escapes the sometimes intelligent and always persistent interrogations of his patients or friends with reference to the best methods of preventing the spread of cholera, small-pox, diphtheria, typhoid fever, and the like? He must be prepared to offer an intelligent opinion on all such questions, as well as on those pertaining to plumbing, sewerage, drainage, ventilation, and every detail of house sanitation. Ignorance on, or indifferent acquaintance with, these subjects is a confession of unfitness to retain the title. Happily, however, some of the exanthematous fevers have not now the same dread to humanity as formerly, since the triumph in medicine in solving the methods of their prevention and cure. But if this be true in a certain degree, there is being added to the list a number of maladies that formerly were not thought to be contagious, or at least infectious, but have now become well known to be so through the investigations and studies of clinicians and men experienced in the science of bacteriology.

Permit me to illustrate by accentuating the importance of a better knowledge concerning the prevention of the propagation of a few of the more serious diseases of this class.

THE PREVENTION OF CONSUMPTION.

I may refer first to one disease—namely, consumption—that comparatively lately has become known to the profession as an infectious disorder; a malady that is destroying more inhabitants of the globe than almost any other known disease, and that last year proved fatal to more than six thousand residents of your own city.*

While it is true that much has been done of late to control its spread and to abridge its ravages in localities, yet how many physicians are ready to admit even now that it is an infectious malady, and that it may be conveyed to a healthy person who is habitually in the atmosphere of a consumptive? If it were possible to apply the knowledge which a few of the more advanced—a small minority—of our profession now possess with reference to the propagation of consumption and to disseminate this knowledge among the mass of physicians, it would be serving humanity in the highest possible way to concentrate the efforts of the entire force toward preventing the spread of this direful disease. In order to do this effectively it would become necessary at the outset to establish an absolute inspection of all foods of an animal nature as well as supervision of the care of all animals that furnish food for mankind, with a view to a rigid condemnation and destruction of such as prove unfit.

Again, if we should undertake to prevent the spread of consumption by the application of all the intelligent means at our command, it would further involve imperious supervision over the food that our cows eat and their stable care, as well as a like supervision over the animals that are slaughtered for our daily consumption. It further also would involve the inspection by a competent veterinary surgeon of all cows that afford milk supply to our cities and villages and of all the animals that are slaughtered for purposes of food, to the end that every tuberculous beast shall be killed and its body cremated. I consider it essential that the latter order shall be enforced with great exactitude. If any portion of a tuberculous animal, excepting its hide, horns, and hoofs, be permitted to enter the avenues of commerce there is danger of the propagation of disease, and I know of no way to effectively abolish such danger excepting to imperiously insist upon the incineration of all tuberculous carcasses.

But we must not stop here: our food supervision must extend to all domestic birds, fowls, and animals whose milk or flesh we use for food. The quantities of tuberculous food consumed by the people assuredly are enormous, and it will require the most rigid system of inspection and supervision by most skilled, honest, and well-paid officials to interrupt, cut short, or prevent traffic in these dangerous and unwholesome aliments.

Besides this the circumspection and control of railway and steamboat travel as well as hotel life would become necessary, and this would simply arouse an opposition from every traffic official and landlord in the country, to say nothing of the indignation of travelers themselves. Yet none such would complain at the exercise of an absolute authority with reference to restraining the transit of small-pox patients, or those affected with diphtheria or cholera. Nevertheless, these maladies, one and all, have not at present one scintilla of the importance connected with their destructive powers that has consumption.

Another most important step toward the prevention of the propagation of consumption consists in the prohibition of the intermarriage of tuberculous subjects. If a man has tubercular disease he should not be allowed to marry a healthy woman, and thus subject her to the danger of contracting the malady from cohabitation with her consort, to say nothing of the liability of propagating tuberculous offspring. For like reasons a tuberculous woman should be prohibited from marrying a healthy man. But if there are cogent reasons why these should not intermarry there are still more forceful arguments that may be offered against the intermarriage of two tuberculous individuals—that is to say, a man and a woman who either have tuberculous disease or who have come from tuberculous families. I make this assertion at random without desiring at this time to enter into a discussion as to whether the laws of heredity govern in consumption or not. But of this I am certain, that for a man with existing tubercular disease to marry a woman of tubercular parentage would be tempting fate with a rude audacity deserving a better cause. The offspring of such a marriage, to say the least, would offer a favorable soil for the growth of the tubercle bacillus. I earnestly hope that before long an enlightened legislature will enact statutes that will prohibit such marriages.

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* Report of Dr. Hermann M. Biggs to the Health Department of New York City.

Still another step in the direction of prevention consists in the establishment of separate hospitals for consumptives and the adoption of measures looking toward their isolation. But here most bitter opposition will be encountered from those who are governed by sympathy, affection, and kinship. Nevertheless, it were well-nigh impossible to prevent the spread of this fateful malady unless the methods and habits of life of its victims can be assuredly controlled. It is admitted by those most familiar with the methods of the propagation of the disease that the sputum of the consumptive constitutes a focus of special danger. Hence, to deal intelligently with the question of prevention, the sputum must be sterilized as soon as it is thrown off. Nor will it answer to deal with it in a half-hearted, indifferent, or slipshod manner; the sterilization must be absolute and immediate, and this can only be accomplished under the eye of a trained expert who knows no law but that of perfect cleanliness and absolute sterilization, and who will not be diverted from the end in view by fear, favor, or affection. I know of no way to effectively enforce rules to prevent the propagation of consumption, except to remove tuberculous persons from all possibility of contact, direct and indirect, with the healthy community.

Without doubt, independently of the infection by food, the most serious menace comes from the respiration of infected dust, and it needs no specious ratiocination to prove to such an audience as this that the one great means of infecting dust is through the sputum of consumptive patients. It has recently been said by a writer in the *British Medical Journal* that it would be well for the medical profession at large to recognize the infectiousness of tuberculous sputum and the danger of letting it dry into dust. Marpman (*Centralblatt für Bacteriologie und Parasitenkunde*, Band xlv, 8, pp. 228–234; *Med. Chron.*, November, 1893) examined the dust of a frequented street in Leipsic and found the bacillary remains on about eighty per cent. of samples of dust examined. From the researches of Marpman we are taught that street dust may easily prove a source of infection, and that people should be taught to desist from expectorating in thoroughfares or public places. Houses that have been occupied by consumptives, too, should receive the most thorough renovation before further use.

It can not be denied that already much has been done to limit the spread of tuberculosis, as a careful examination of statistics would prove, but these we have no time here and now to enter into. The results already accomplished have been outside of the prevention of intermarriage, inspection of food, attempt at isolation, or sterilization of sputum, and have been mainly achieved through the adoption of improved sanitary regulations—better nutrition, purer air, and other influences of like character.

I stand here to plead for the enforcement, in addition to these well-known sanitary measures, of the prevention of intermarriage, of the rigid inspection of animals that furnish food, and the isolation of tuberculous patients, and I ask this academy to stand together as one man until it has brought about such a change in public sentiment and improved statutory law as shall make all these conditions possible. I believe it will be yet just as possible to quarantine and control the methods and habits of life of the consumptive as it is now those of a small pox, yellow fever, or cholera patient. At all events I certainly hope that an enlightenment of the people on this subject will lead to such results.

TYPHOID FEVER.

Turning from the consideration of tubercular disease, we approach another infectious malady which has attracted the attention of physicians and sanitarians for more than a generation. In July, 1845, Dr. Austin Flint, Sr., then of Buffalo, and afterward one of your distinguished academicians, published in the *American Journal of Medical Sciences* an account of an epidemic fever which occurred at North Boston, Erie County, N. Y., during the months of October and November, 1843.

It appears that in September, 1843, a young man from Massachusetts stopped at Fuller's tavern in North Boston. He had been unwell for several days, a diarrhœa being among the most prominent and early of his symptoms; he was first seen by a physician only six days before his death, who found him suffering from diarrhœa, low muttering delirium, sordes, and other symptoms that grouped we nowadays characterize as a typhoid condition. He lived twenty-eight days, and from this case the fever spread to other members of Mr. Fuller's family and to those living nearest to his house. Seven of Mr. Fuller's family had the fever, of whom three died. Twenty-one other cases occurred in five families, all being within ten rods of Mr. Fuller's house, of whom seven died, making in all, including the stranger, twenty-eight cases and ten deaths. The whole population of the hamlet amounted to forty-three persons; none were attacked who were over twenty-three years old; the youngest was only a year old, and a large proportion were children.

Dr. Flint visited the locality of the epidemic, during which time he made a post-mortem examination of the body of a child about twelve years old, and took notes at the bedside of the histories of nine cases, together with symptoms presented at the time of his visit. It was his first distinguished success as an investigator. He found and diagnosticated a fatal disease then unknown in western New York, traced it from New England to the hamlet of North Boston, distinctly established its contagion, and found its focus in a particular well of water which had been poisoned by the excreta of an original case. Further use of this well was prohibited. The cases then existing recovered and no new ones appeared. The work was done with all the precision and completeness that characterize the very best detective work coupled with all the skill and acumen of the scientific clinician. Nothing was omitted that would contribute to the completeness and convincing power of the evidence adduced, and the published report has become a classic in this country and in Europe. It also formed a basis of a series of essays that Dr. Flint subsequently wrote on typhoid fever.

Thus was established for the first time a direct relationship between poisoned excreta and the contagion of typhoid fever. I wish we also could say that there had been established an absolute knowledge of the contagium of this destructive malady and the methods of its implantation. Who can say to-day with absolute certainty that the infection of typhoid can be prevented in a given case? Who has yet been able to solve the subtlety with which the bacillus of typhoid fastens itself upon the organism, or who can say what is the most favorable soil for its implantation? Medical societies are constantly debating these questions, and the pages of medical journals are teeming with learned expositions of the various and manifold minutiæ of the subject. I listen to these debates and am, to a certain extent, familiar with journalistic literature. Yet I fail to find a satisfactory answer to the various questions bearing on the communicability of typhoid or any final and determined method of preventing its propagation. There are nearly as many opinions on these several details as there are participants in the debates or writers in periodicals. All this indicates that there is much yet to be done in experimental research, clinical observation, and bacteriological study in relation to typhoid fever. If a conclusion is ever to be reached thereon that will be accepted as final by the profession, it must be through the combined efforts of clinicians, pathologists, bacteriologists, and sanitarians. In the city of Chicago alone, from January 1, 1890, to November 1, 1893, there have been, according to published reports,* five thousand and eighty-seven deaths from typhoid fever—an average of a hundred and ten a month. This indicates that during this period there have been between thirty and forty thousand cases. There are, says Vaughan, annually fifty thousand deaths in this country from typhoid fever, and half a million sick with it.† If it were possible to estimate the money lost to the community in salaries, wages, and expenses from this one disease, the sum would be something enormous to contemplate, and yet there is a great outcry in most cities against the ordinary expenses of the health department. This embarrasses the officials, and the evil should be corrected through an enlightenment of the masses on the subject. If their sympathies can not be reached from the humanitarian side of the question, then their interests must be appealed to from its economic aspects.

DIPHTHERIA.

Similar statements may be offered with reference to diphtheria. Who can say what is the precise method of the propagation of this subtle poison? Who has yet ventured to tell us absolutely how it enters the system, what is its favorite soil, and why under apparently like conditions one individual contracts the disease, while another has only a mild malaise, and still another goes scot-free? Who has told us with absolute certainty what part mephitic vapors play in the causation of this disease? In nearly all the large cities of the world during every month of the year cases of diphtheria are reported ranging all the way from a few scattering victims to many hundreds and even thousands, with a fearful percentage of mortality. Here is another field where moot points are many, opinions widely differ, and satisfactory conclusions are still in the air. Shall it be said during all the future years that diphtheria baffles all attempts at prevention—that it paralyzes the efforts of the medical profession to control it or to fix its habitat? This would be a sad confession of weakness, and a stigma upon the science of medicine that ought not to be permitted to remain. Let us address ourselves to the study of its prevention with an assiduity that will at least deserve success.

GONORRHŒAL INFECTION IN WOMEN.

But one other example, yet in a most important field, will be cited at this time. I refer to gonorrhœal infection in women. It is doubtful if any disease is capable of propagating more of sickness, woe, and misery than a neglected or uncured gonorrhœa. In view of recent researches, and especially of clinical experiences evolved at the operating table, it is now admitted that what was taught and written relating to the treatment of this infection prior to 1872 was little better than so much chaff; and this remark applies with equally cogent force to the acute stage in the male as in the chronic stage in the female. Though it is true that the medical profession gave little heed to the notes of warning sounded by Noeggerath when he published his opuscule in 1872, now, after twenty years of continual hammering, the foremost men in medicine have finally become aroused to the dangers that lurk in an uncured or latent gonorrhœa. This is especially true of genito-urinary surgeons and of those gynæcologists who practice pelvic surgery. Other specialists and clinicians who listen to their debates and read such convincing expositions of the subject as have been given on the one hand, for example, by your distinguished academician Brewer, and on the other hand by Cushing, of San Francisco, have accepted in a measure their teachings.

Brewer has conclusively demonstrated in a clinical history that after six years had elapsed since infection, and where upon examination no secretions could be pressed from the urethra, yet endoscopic examinations revealed granular patches and congested areas in the neighborhood of the bulb and behind a stricture of large caliber measuring 33°. In this case the microscope showed several characteristic colonies of gonococci. Six weeks afterward, contrary to advice, this man married, and two weeks later had communicated the infection to his wife, in whom it went through the various stages of inflammation and resulted in abscess.*

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* *Med. Record*, December 30, 1893.

† *Med. News.*

Cushing has shown that a woman who had been infected five years previously, without intermediate exposure, finally married and infected her husband, who had a severe urethritis, which resulted in a perineal abscess. Cushing removed both tubes and ovaries, that were distended with pus, in which gonococci were found. The secretion from the urethra of the husband was examined and gonococci demonstrated without difficulty. Here, then, are two cases: one in which the infection was carried by the male for six years and then communicated to his newly wedded wife, and the other in which it was carried by the patient for five years and then communicated to her husband, who had all the symptoms of acute gonorrhœa resulting in abscess.†

I have cited these two examples as types of this disease, showing its subtlety, how it lurks in some nook or cranny of the genital tract for years, thence to be conveyed to an innocent spouse or consort, in whom it lights up a disease that ravages the entire pelvic cavity. The list might be prolonged indefinitely, but this is neither the time nor place to recite lengthy clinical records.

Only within the last few years have physicians been ready to admit the terrible destructiveness of this malady. Until lately most physicians or surgeons who have been called upon to treat the disease in its acute stages, whether in the male or female, have generally regarded it in a light or trifling manner, contenting themselves for the most part with ministering to the first distress, but paying little heed to its secondary probabilities. The victims of this disease, too, have been taught to regard it as a mere trifle, that a few urethral or vaginal injections and a few doses of copaiba would assuredly cure without danger of any secondary complications, and that even a long-standing gleet had little or no significance beyond the mere personal discomfort that it caused. Only the few even consulted physicians, while the many borrowed a syringe and a prescription from a friend, or obtained the same from a kindly and sympathizing druggist, who, for a few shekels, is ever ready to assure the sufferer that his disease is of slight consequence, that he will be well of it in a few days, and that all he needs is a few injections with "No. 1" and a few days' dosing with "No. 2."

The literature of this disease is being almost entirely rewritten, and the teachings of the schools are recasting in view of the awful consequences of neglect to cure or prevent the propagation of this subtle, deceptive, and virulent infection when once it has been contracted. It has come to pass that a woman who accepts an offer of marriage finds herself treading upon dangerous ground—a danger far more serious than those contemplated by Mother Eve when she entailed her sex—and it becomes a problem of the most serious import when her answer may fetch her to a spring of woes unnumbered. I speak seriously, for it is a subject that demands our most thoughtful consideration. If we would stamp out the frightful malady, or even prevent its propagation to innocent persons, we must, as a profession, exert ourselves to the utmost to bring enlightenment to the people and to enforce an intelligent application of the laws of prevention. We have been taught to regard syphilis as the most destructive of the venereal diseases, but I believe gonorrhœa to be a far more serious disease than syphilis, and that it plays more dreadful havoc with the community. We are seeing constantly fewer and fewer syphilitics, while gonorrhoics are increasing in number, and the secondary consequences of the disease are becoming better understood. I am well aware that difficulties surround this subject almost greater than any other, owing to its extreme delicacy; nevertheless, the fullness of time has arrived when action must be taken to arrest a disease that leaves such horrible consequences in its track, and I appeal to this academy to formulate and carry out some plan that shall have for its purpose the enlightenment of the community, the education of physicians, and the enactment of such statutes as shall prevent others than physicians from prescribing or in any manner giving advice as to the treatment of gonorrhœa.

CONCLUSIONS.

In my early youth I learned to look to the New York Academy of Medicine as the leader of medical thought in this country. My father, a physician, so taught me, as a child receives impression from the hornbook on his mother's knee. It is here that medical men from all quarters of the globe are received and entertained at your meetings and go away with new inspirations, renewed energy, and increased intelligence. This academy becomes perforce a mighty instrument for the advancement of medical science and improved methods in medical art. One of the great orators of this metropolis asseverated in his speech at Chicago on Manhattan day that the World's Fair had taught us that art was more godlike than science, for, while science discovered, art created. I believe this applies as well to medicine as to other arts and sciences. I ask you to remember that I am not unmindful of the great work this academy has inaugurated from time to time during its history with reference to the prevention of disease, nor of the fact that it is still laboring with might in that field. When this academy speaks the world moves. When she asks that certain methods and certain means be adopted with reference to improvements in quarantine, they are done. When she recommends the board of health to adopt certain measures with reference to the details of preventive medicine, the board at once accepts its conclusions and adopts them. It has gratified me to observe very recently the splendid action taken by the academy with reference to the creation of a National Bureau of Health, and I sincerely hope its recommendations may be given form and force in the immediate future through national statutory law.

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* The Contagiousness of Chronic Urethral Discharges. *Journal of Cutaneous and Genito-Urinary Diseases*, March, 1891.

† Contribution to the Study of Pelvic Diseases. *Transactions of the American Association of Obstetricians and Gynæcologists*, vol. i, 1888, 17.

But it is not as sanitarians, or public health officers, or as administrators of state medicine that I appeal to this Academy of Medicine. I beseech you, each and every one, in your capacities as individual members to do your parts toward inaugurating a fashion that shall have for its purpose discussions relating to the prevention of disease at the general meetings of this academy to the exclusion of all other scientific work. The report of these proceedings given to the medical journals and published as *ex cathedra* edicts will arrest the attention of physicians all over the world, and thus serve to begin a campaign of education on the several questions to which I have called attention, as well as many others that for obvious reasons could not be specified on this occasion. I have merely attempted to accentuate those that seemed to me of greatest importance. Cholera, small-pox, and even yellow fever are no longer regarded as plagues of humanity, but consumption, diphtheria, typhoid fever, and gonorrhœa are slaying or invaliding *unnecessarily* hundreds of thousands annually.

The laity must be educated to regard consumption as a communicable disease, and to accept laws and regulations calculated to restrict its propagation and restrain its victims within the limitations of safety, so far as uninfected individuals are concerned. But rules, too, must be formulated for the prevention of the spread of diphtheria and typhoid, and these must be insisted upon without deviation, and the community must learn to yield a hearty support to such beneficent and humane methods as have for their sole and distinct object the protection of the individual. Finally, I hope that this academy will address itself seriously to the eradication, prevention, and cure of that loathsome, subtle, and destructive disease gonorrhœa, that is directly and indirectly bringing to invalidism or death so many innocent thousands throughout the civilized world. I am well aware that all these questions are as well or better known to you than to me; I am only attempting to recall them to your minds for the purpose of stimulating or encouraging renewed energy in their consideration.

Pardon me, Mr. President, if I have said more than I ought to have said, or more than there was occasion to say. I have spoken from a deep conviction of the importance of the subject, and with a realizing sense that I am standing in the presence of men who are doing as much or more than any other group of equal number toward the prevention of the diseases in question, as well as others that have not been mentioned. I know, too, that your sections are made up of recognized men of exceptional skill in their several departments, and whose work goes out every month to the professional world in brilliant and well-recorded achievements. Your orthopædists are restoring hundreds of maimed children to usefulness and self-support; your ophthalmologists are restoring to sight thousands of eyes every year, and are preventing the beginning of destructive processes in many thousands more; your gynæcologists are restoring to health numberless invalid women —wives, mothers, and sisters—who would otherwise drag through life a miserable existence or obtain all too early sweet relief in death; and so on through the entire list of your splendidly organized sections. But in spite of all this, let me implore you to set apart at least one meeting in every month, if not both, where all the splendid talent of these sections shall merge itself for the discussion of problems relating to the prevention of disease; and I venture to hope that these discussions may assume that particular form which will prove valuable to individual physicians who are battling with disease in the smaller towns, hamlets, and remote points in the land, and who are known and properly designated as family doctors. These are the men who need your aid, who deserve the stimulus of your best thought, and the inspiration of your example. As a final word let me enter a plea in their behalf to the end that your literature be sent to them with a liberality so characteristic of your organization, and that they be invited when practicable to attend your meetings.

Mr. President, it remains for me to thank you for the distinguished honor you have conferred upon me in inviting me to address this academy at this time. I apppreciate it more than mere words can express. Yet I regret that I have so inadequately fulfilled the responsibilities of the high office you have so kindly thrust upon me. But I assure you, sir, that I shall carry with me down to the crack of doom the memory of this pleasant visit to the New York Academy of Medicine.

284 Franklin Street.

ON GUAIACOL APPLIED EXTERNALLY AS AN ANTIPYRETIC.

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RESIDENT PHYSICIAN TO BAY VIEW HOSPITAL,
BALTIMORE.

Sciolla[*] was the first to point out that guaiacol, when applied to the skin, acted as a powerful antipyretic. He used this remedy especially in tuberculous cases and found that two to ten grammes of guaiacol painted upon the skin of the limbs, back, or abdomen (the parts being then covered with gauze or gutta percha) produced a reduction of temperature in fifteen minutes, the patient tasting the remedy. The first traces of guaiacol were noted in the urine in one hour, the largest quantities in from four to six hours. The temperature fell in four to six hours from 2° to 3° C. and then gradually rose. He obtained the same results in various other febrile diseases. Pure guaiacol never produces any inflammatory condition of the skin.

He was soon followed by Bard and Lannois,[†] who confirmed Sciolla's statements. The treatment, according to Lannois, is suitable for cases of tuberculosis except those in which there are cavities in the lungs. The drug was rubbed over the chest, back, or thigh, the part being afterward covered with a dressing.

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[*] Sciolla. *Cron. d. Clin. Med. di Genova*, 1892–'93, i, 171–176; also *Semaine médical*, 1893, No. 21.

[†] Lannois. *Lyon médical*, 1893, lxxiii, 459–464.

Robillard * also confirmed the statements of Sciolla concerning the antipyretic action of guaiacol when applied externally.

Cassovice and Sigalea † applied the drug in combination with tincture of iodine (one part of guaiacol to five parts of the tincture of iodine) in the treatment of pleurisy. This was painted over large surfaces of the thorax in the evening. A fall of temperature, profuse perspiration, and an increased flow of urine followed; complete resorption of the pleuritic effusion resulted.

Guinard, ‡ after making numerous experiments concerning the effect of the local application of this drug, concludes that the fall of temperature is due to an effect upon the heat center in the brain produced reflexly through the peripheral nerve terminations, and to a slight degree to the inhalation of the vapor of the drug. The effect is more marked in febrile than in non-febrile conditions.

Stolzenburg,# who made similar observations with this drug, finds that the fall of temperature lasts five to eight hours.

A chilly sensation or chill is frequently produced and sometimes collapse. The initial dose should never be above two cubic centimetres.

Quite recently Da Costa ‖ reports his experience in the use of this drug. He finds that marked reduction of temperature is produced when guaiacol is simply painted over the skin with or without friction. In a case of typhoid fever the temperature fell from 105·4° F. to 98·6° F. in three hours and a half. The reduction of temperature is rather slow, but is not accompanied by any disturbance of the nervous system; a chill was noted in but one case. There was no increase in debility; no delirium; no depression or sign of collapse. In a case of pneumonia the striking effect of guaiacol upon the temperature was not so manifest as in typhoid fever, though the temperature did fall two degrees. The special advantage of guaiacol is its use in typhoid fever when the cold bath can not be applied. While the reduction of temperature following the application of guaiacol is slower than after the bath, the effect is more permanent. As regards the dose, Da Costa believes that the maximum should not be over fifty drops, and so large an amount should rarely be used. Thirty drops is the average dose. After washing the parts with soap and water the guaiacol is applied and rubbed in slowly.

Our experience with guaiacol is based upon its use in seventeen cases. In all, the skin of the abdomen was washed with soap and water, the parts were dried, and the drug was rubbed in for fifteen minutes and covered. There were eight cases of pneumonia, two cases of typhoid fever, two cases of pulmonary tuberculosis, one case of malarial fever, two cases of influenza, one case of rheumatism, and one case of erysipelas.

CASE I. *Pneumonia.*—S. C., aged thirty-five years, admitted into hospital February 6, 1894; taken ill on February 2d; had no chill, but felt badly and had fever and suffered with cough and pain in the chest. The examination showed consolidation of upper lobe of left lung. The temperature was 102° F.; at 3 P. M. it rose to 103·6° F.; at 3.30 P. M. to 103·4° F.; thirty drops of guaiacol were applied and the temperature fell gradually to 100·4° F. at 4.30 P. M.; it rose, however, at 5 P. M. to 101° and at 6 P. M. to 104°, when thirty drops of guaiacol were again applied, and the temperature gradually fell to 100° F. at 8 A. M. the next morning (February 7th). After this it never rose above 102° F. until February 11th; at 6.45 P. M. the temperature was 104° F.; thirty drops of guaiacol were again applied and the temperature fell to 100° at 8.30 P. M.; at 10 P. M. it was again 103°, but fell from this time on of its own accord. The application of the guaiacol in this case produced profuse diaphoresis; no chill or chilly sensations were noted. Great exhaustion was experienced by the patient at the time of the fall of temperature. It is interesting to note that the temperature of this patient never became normal, and that he has since developed tuberculosis in the same lung in which he had pneumonia.

CASE II. *Pneumonia.*—W. F., aged twenty-eight years, admitted February 26, 1894; had a severe chill two days before admission into hospital; also had pain in the chest and fever. On examination, the right lower lobe was found consolidated. Temperature, 103° F., which soon ran up to 105° F. at 4 P. M. Thirty drops of guaiacol were applied, and the temperature fell to 103° F. at 5 P. M., but was again up to 105° at 6 P. M. A bath was given, and the temperature fell to 101° at 8.30 P. M., but was again 104° at 9. P. M. and 105° at 10 P. M. The temperature fell the next morning (February 27th), but at 3 P. M. of this day was 105° F. Thirty drops of guaiacol were applied, and the temperature fell gradually to 101° at 5.15 P. M., but at 7 P. M. was again 103·8° and at 9 P. M. 104° F.

Chilly sensations, profuse perspirations, and great depression and weakness were noted when the temperature had been reduced by means of guaiacol. The bath, which seemed to have reduced the temperature in this case quite as well as guaiacol, did not produce any depression.

CASE III. *Pneumonia.*—W. R., aged thirty-two years, admitted February 27, 1894; had a marked chill two days prio to his admission; also fever, cough, and pain in his chest.

The two upper lobes of the right lung and the upper lobe o the left lung were found consolidated. Temperature at 3 P. M. 104·2° F. Thirty drops of guaiacol were applied, and the temperature gradually fell to 100·6° at 5.30 P. M., but was 106° at 7 P. M. A cold bath was given, and the temperature fell to 102° at 7.30 P. M., but was 104° at 11 P. M. At 3 P. M. on the following day (February 28th) the temperature was 104° F., but was reduced by a bath to 101·4° at 4 P. M. It ran up gradually to 104° again at 11 P. M. At 3 P. M. on the 1st of March the temperature was 104·6°, and at 3.30 104·4°. Thirty drops of guaiacol were applied, and the temperature gradually fell to 100·4° at 6.15 P. M. At 8 A. M. the next morning it was but 102° F. Chilly sensations were noted in this case after the use of guaiacol; also profuse sweating and depression. The guaiacol reduced the temperature more gradually and lower than the bath, but the bath produced less depression.

CASE IV. *Pneumonia.*—M. G., aged thirty-three years, admitted March 7, 1894; had a severe chill on March 5th, followed by high fever. On examination, consolidation of the lower lobe of the right lung was noted. At 10.15 A. M., March 8th, the temperature was 104°. Thirty drops of guaiacol were applied, and the temperature fell gradually to 101° at 12 noon. At 1 P. M. the temperature was again 104°. At 11.45, March

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* Robillard. *Compt. rend. de la Soc. de biol.*, Paris, 1893, 9 S. V. 716; also *Gaz. méd. de Paris*, 1893, 85, ii, 433–435.

† Cassovice and Sigalea. *Semaine médical*, No. 52, 1893.

‡ Guinard. *Province méd.*, Lyon, 1893, vii, 325–328, and *Bullet. gén. de thérap.*, 1893, 402, 1 liv., p. 339.

# Stolzenburg. *Berliner klinische Wochenschrift*, 1894, No. 5.

‖ Da Costa. *Medical News*, January 27, 1894.

9th, the temperature was 104°. Thirty drops of guaiacol were applied, and the temperature fell gradually to 102° F. at 1 P. M., but rose to 104·4° at 3 P. M., whereupon a bath was given, and the temperature fell to 101·4° and did not rise again above 103° F. In this case no chilly sensation or depression was noted after the application of guaiacol. Profuse perspiration was, however, produced by the drug.

Case V. *Pneumonia.*—J. C., aged thirty-six years, admitted March 9, 1894. Patient had a chill just before entering the hospital. He complained of fever, cough, and pain in his chest.

On March 10th consolidation of the lower lobes of the right and left lung was noted. On this day, at 8 A. M., the temperature was 105°; at 8.30, 104°. Thirty drops of guaiacol were applied, and the temperature fell to 102° at 9.30, but was again 104° at 11 A. M. A bath was given, and the temperature fell to 101·6° at 12 noon, but at 3 P. M. was again 104°, and another bath was given. The temperature fell gradually, and never became high again. The guaiacol did not produce a chill or chilly sensations in this case, but marked depression was noted; no depression was caused by the use of the bath.

Case VI. *Pneumonia.*—J. F., aged thirty-seven years, admitted March 9th; had had a chill on the 7th of March, which was followed by high fever. On examination, the upper lobe of the right lung was found consolidated. On March 10th, at 10 A. M., the temperature was 104·6°. Thirty drops of guaiacol were applied, and the temperature fell gradually to 101·4° at 12 noon, but arose gradually to 103° at 9 P. M. At 8 A. M., March 12th, the temperature was 104°. Thirty drops of guaiacol were again employed, and the temperature fell to 100° at 11 A. M., but was 103° at 3 P. M. This patient felt a chilly sensation after the use of the guaiacol, but no depression. He perspired profusely. Again, on the 13th of March at 3 P. M., his temperature was 104·4°, and a bath was given which reduced his temperature to 101°. The effect produced by the bath was not so marked or pleasant as that produced by guaiacol, and when, on the 14th, it was again necessary to reduce his temperature, he preferred the guaiacol to the bath. The guaiacol reduced the temperature again from 104° to 101°.

Case VII. *Pneumonia.*—William M., aged fifty-five, admitted March 10, 1894; had a chill three days before entering hospital, followed by fever and tightness on chest. On examination, the lower and upper lobes of the right lung were found consolidated. At 8 A. M., March 11th, the temperature was 104·2°. Thirty drops of guaiacol were applied, and the temperature fell to 100° at 10 A. M.; it rose to 103° F. at 3 P. M., but after this time fell without the use of any antipyretic. The patient experienced no chill after the application of the guaiacol, but suffered markedly from the profuse diaphoresis produced by the drug.

Case VIII. *Pneumonia.*—J. D., aged thirty-one years, admitted March 11, 1884. On the morning of admission had a chill followed by fever. Examination on March 12th revealed a consolidation of the apex of the right lung and of the base of the left lung. On this day at 11.30 A. M. the temperature was 103·4°. Thirty drops of guaiacol were applied, and the temperature fell to 102° at 1 P. M., but was again 103° at 2 P. M. On the 13th, at 11 A. M., the temperature was 104°; a bath was given, and the temperature fell to 101° at 11.50 A. M., but rose to 104.6° at 3 P. M. Thirty drops of guaiacol were now applied, and the temperature fell to 101° at 6 P. M., but again rose to 105° at 9 A. M. This temperature was again reduced by a bath. No chill or chilly sensation was noted in this case. After guaiacol had been applied the patient felt weak, and suffered from profuse diaphoresis.

Case IX. *Typhoid Fever.*—R. S., aged twenty-five years, admitted February 5th; had been previously in good health. Four or five days before admission to the hospital he had suffered from profuse diarrhœa, malaise, and epistaxis. When admitted the patient had profuse diarrhœa (typhoid stools) and tympanites; no special pain or tenderness over the abdomen. On the 6th of February, at 10 A. M., the temperature was 103·6° F.; thirty drops of guaiacol were applied and the temperature fell to 101° at 12 M.; it rose gradually and at 6 P. M. was 104·6°, whereupon thirty drops of guaiacol were again applied; the temperature fell gradually to 102° at 9 P. M. and did not rise until 6.45 P. M. the next day, when the thermometer registered 104°; thirty drops of guaiacol were again applied and the temperature fell once more to 101° F. at 8.30 P. M.

At 8 P. M. on the 8th the temperature was 103·6°; a cold bath was given and the temperature fell to 102·8° at 3 P. M., and did not again rise until the 10th, when, at 9.30 A. M., the temperature was 103·6°; thirty drops of guaiacol were applied at this time and the temperature fell to 100° at 5 P. M., but at 6 P. M. rose to 103°. The application of guaiacol did not produce any marked chill or chilly sensation in this case, but the profuse perspiration which the remedy caused was very exhausting to the patient. The bath which was applied reduced the temperature as well as the guaiacol without causing the intense exhaustion.

Case X. *Typhoid Fever.*—R. L., aged twenty-four years, admitted February 11, 1894. Patient had been ill a week before admission into hospital; he had suffered with profuse diarrhœa, feeling of malaise, headache, and fever. On admission the abdomen was found distended and very tender to the touch; the diarrhœa was still profuse. At 1 P. M. the temperature was 104°. Five grains of antipyrine were administered and no reduction of temperature was noted. The temperature was 105° at 4.15 P. M.; thirty drops of guaiacol were applied and the temperature gradually fell to 102° at 6 P. M.; it rose gradually again until 12 at night, reaching 104°. At 12 o'clock noon the next day the temperature was 105·8°; forty drops of guaiacol were applied and the temperature gradually fell to 101·4° at 3 P. M. At 6 P. M. it was again 105°; a bath was given and the temperature fell to 104° at 6 P. M.; at 7 P. M., the temperature still being 104°, ten grains of antipyrine were administered and the temperature fell to 103·4° at 11 P. M.

On the 13th, at 3 P. M., the temperature rose to 105°; forty drops of guaiacol were again applied and the temperature fell gradually to 100·6° at 6 P. M., but rose to 105° again at 8 P. M. A cold bath was next administered and the temperature fell to 102·6° at 11 P. M., but rose to 104·4° on the following morning at 10.30. Forty drops of guaiacol were now applied and the temperature was reduced to 99° at 2 P. M., but at 4.30 P. M. was again 105°.

In this case guaiacol produced a marked chill and great depression and profuse sweating, and the patient became very weak and exhausted. While the bath did not lower the temperature so markedly as the guaiacol, the effect produced was more stimulating and refreshing and no depression was noted.

Case XI. *Pulmonary Tuberculosis.*—F. O., aged forty-five years, admitted February 2, 1894. Patient has had cough and night sweats for the past five years; has also expectorated blood at times.

On admission, apices of both lungs were found consolidated. On February 3d at 6.15 P. M. the temperature was 103·6° F.; thirty drops of guaiacol were applied and the temperature fell gradually to 99·2° at 9 P. M.; it gradually rose, however, during the night, and at 7.30 A. M. the next morning was 103°. The application of guaiacol occasioned such profuse perspiration, marked depression, and weakness that it was not again applied in this case.

CASE XII. *Pulmonary Tuberculosis.*—G. D., admitted February 15, 1894; patient had been ill some time before admission; suffered with cough, expectoration, and night sweats. On examination the entire right pleural cavity was found to contain fluid; this was removed by aspiration and the apex of right lung was found consolidated.

On the 15th, at 6.30 A. M., the temperature was 104° F.; thirty drops of guaiacol were applied, and at 9 P. M. the temperature had fallen to 101·8°, and at 11 P. M. was again 104°.

On the 16th, at 5 P. M., the temperature was 104°; forty drops of guaiacol were applied. At 6 P. M. the temperature was 103°, and at 7 P. M. 104°. Five grains of antipyrine were administered and the temperature fell to 101·4° at 9 P. M., and did not rise again until 12 noon the following day, when the temperature rose to 104°; with five grains of antipyrine the temperature was again lowered to 101° at 2 P. M., but rose to 104° at 11 P. M. At 3.45 P. M. the same day the temperature was 103·4°. Thirty drops of guaiacol were again applied, but the temperature rose to 104° at 5 P. M. In this case, in which guaiacol was applied on three separate occasions, the temperature upon the first occasion was reduced from 104° to 101·8° and quickly rose again to 104°. In the second and third instances the temperature was not reduced at all, while five grains of antipyrine markedly reduced the temperature. Other trials were made with guaiacol upon the same patient, but in no instance were we able to produce any marked reduction of temperature; marked diaphoresis and depression were, however, noted.

CASE XIII. *Malarial Fever.*—J. H., aged forty-six years, admitted March 3, 1894. Has had a chill every second day for two weeks; suffered with malaise, headache, and pains in the back and loins. Patient had a chill on day of admission; malarial organisms were present in the blood. At 8 P. M. the temperature was 104° F. Fifty drops of guaiacol were applied and the temperature gradually fell to 100·6° at 9 P. M. At 11 P. M. the temperature had again risen to 103°, and five grains of quinine were given at this time and ordered three times daily, and, as the temperature continued to rise to 104°, at 5.15 P. M. fifty drops of guaiacol were again applied and the temperature fell to 101° and did not again rise. The guaiacol did not produce any chilly sensation in this case, but caused profuse diaphoresis and weakness.

CASE XIV. *Influenza.*—E. G., aged thirty-five years, admitted into the hospital March 1, 1894. Patient has had pain in the head and loins and a feeling of malaise for several days. On the day of admission the temperature was 104·6° F. at 9 P. M. Thirty drops of guaiacol were applied, and the temperature gradually fell to 101·4° at 11 P. M. On the second day the temperature had risen to 105·2° at 11.40 A. M. Thirty drops of guaiacol were again applied; the temperature fell to 103° at 1 P. M., but at 3 P. M. had risen to 104·4°; with five grains of antipyrine the temperature was gradually reduced to 101° at 3 A. M. the following morning. The guaiacol applied in this case produced neither a chill nor chilly sensation, but profuse diaphoresis which occasioned great prostration. The temperature was reduced quite as well with the guaiacol as with the acetanilide, and the same prostration and diaphoresis were noted when the antifebrin was employed.

CASE XV. *Influenza.*—M. D., aged thirty-one years, admitted March 8, 1894. Patient had a chill the night before admission; since then has been feeling badly with, pains in his limbs, headache, nausea, and loss of appetite. At 3 P. M. on the 8th the temperature was 104° F.; thirty drops of guaiacol were applied. The temperature fell to 101·6° at 4.30 P. M., but rose gradually to 104° at 6 P. M. Ten grains of antipyrine were administered, which reduced the temperature to 102° at 9 P. M., and it did not again rise.

No chill, chilly sensation, or depression was noted after the use of guaiacol. The patient felt better after the use of the drug than before it had been applied.

CASE XVI. *Acute Articular Rheumatism.*—W. G., aged thirty-eight years, admitted March 5, 1894. Had severe rheumatic pains in left wrist, knee, and ankle, with swelling of these joints. At 8.15 P. M. on the day of admission the temperature was 104° F.; thirty drops of guaiacol were applied and the temperature fell gradually to 102° at 9 P. M. This case was subsequently cured with salicylate of sodium.

The guaiacol produced marked perspiration, but no chills or chilly sensations were noted. Marked prostration was, however, noted.

CASE XVII. *Facial Erysipelas.*—G. T., aged thirty-five years, admitted into hospital March 16, 1894. The temperature at 4.45 P. M. of the same day was 104·6° F. Thirty drops of guaiacol were applied. At ten the next morning the temperature had only fallen to 103°. Thirty drops of guaiacol were again applied and the temperature gradually fell to 100° at 1 P. M. The patient had no chill or chilly sensation after the use of guaiacol, but felt better; no weakness or prostration was noted.

Case.	Disease.	Average reduction of temperature.	Average time required after application of guaiacol to produce lowest fall of temperature.	Chill or chilly sensation.	Depression.	Diaphoresis.
1	Pneumonia.	3·6°	3 hours.	No.	No.	Profuse.
2	"	2°	1 hour.	Chilly sensation.	Exhaustion.	"
3	"	4·4°	2½ hours.	Chilly sensation.	"	"
4	"	2·5°	1½ "	No.	No.	"
5	"	3°	1 hour.	"	Marked exhaustion.	"
6	"	3·4°	3 hours.	Chilly sensation.	No.	"
7	"	4°	2 "	No.	Yes.	"
8	"	2·2°	1¾ "	"	Marked exhaustion.	"
9	Typhoid fever.	2·7°	3½ "	"	Weakness.	"
10	Typhoid fever.	3·6°	3½ "	Marked.	Great depression.	"
11	Pulmonary tuberculosis.	4·2°	2¾ "	"	Great depression.	"
12	Pulmonary tuberculosis.	1·2°	1¾ "	No.	Yes.	"
13	Malaria.	3·4°	2¼ "	"	Yes, marked.	"
14	Influenza.	2·5°	1¾ "	"	Marked depression.	"
15	"	3·4°	1½ "	"	No.	"
16	Rheumatism.	2·2°	1¾ "	"	"	"
17	Erysipelas.	2°	4 "	"	"	"

From these observations concerning the external application of guaiacol in fever we are justified in concluding:

1. That this drug has a powerful antipyretic action, occasioning a reduction of from one to four degrees of temperature in from one to four hours.

2. That in all cases this reduction of temperature is accompanied by profuse diaphoresis, which may or may not be accompanied by a chill or chilly sensation.

3. That great exhaustion is frequently produced.

4. That the effects may be obtained from comparatively small doses (from thirty to fifty drops), and that great care should therefore be exercised in the use of the

drug. The drug should be applied but once or twice daily, and the initial dose should not be above thirty drops.

5. That the effect produced by guaiacol, though more powerful, is the same as is obtained from most of the other antipyretics of the coal-tar series, and that the same care must therefore be exercised as with the other preparations. Its effect differs from the *stimulating* cold bath in being *depressant.*

6. That the main indication for its use is in diseases accompanied by high fever in which the cold bath can not be applied. It may therefore be especially useful in typhoid fever as well as in all other diseases accompanied by high fever in which irritability of the stomach prevents the use of other antipyretics.

NOTE.—Since the foregoing was written an article by Dr. W. S. Thayer on Notes on the Value of Guaiacol Applied Externally as an Antipyretic has appeared (*Medical News*, March 31, 1894). His results agree essentially with those obtained by us.

A BRIEF NOTE ON SOME CASES RECENTLY ADMITTED TO THE SURGICAL SERVICE AT THE NEW YORK CANCER HOSPITAL.*

By CHARLES A. POWERS, M. D.,
SURGEON TO THE HOSPITAL.

As a preface to the hasty remarks which I have to make on the topic embodied in the foregoing title it may be well to sketch, in short order, some of the conditions governing the institution.

Patients with real or suspected malignant disease, with neoplasms of any form, applying at the hospital are admitted to the free wards, and are divided into three classes:

1. Operable surgical cases.
2. Operable gynæcological cases.
3. Inoperable or chronic cases.

It is with the first class that I have to do, and the cases to which I shall briefly refer are those of patients who applied directly to the hospital and were admitted during the four months ending with January 31, 1894, to the active surgical wards. Cases of benign tumors are not included, nor are patients with cancer sent by me from my office to the hospital, or those referred directly to me there by physicians or former patients.

The wisdom of admitting on equal terms supposedly malignant and benign tumors is shown by the very considerable number of instances in which a neoplasm considered benign on admission has proved, on removal, to be malignant.

Examinations for admission are made by the house surgeon, and while in general inoperable cases were referred by him to their proper wards, it so happened in some instances that cases deemed operable by him were thought otherwise by the attending surgeon. These latter are included in the following list:

Cases of cancer of the breast and axillary glands, too extensive to warrant thought of cure, but seeming to demand the relief afforded by a palliative operation, 8.

Cancer of the breast, inoperable, 4.

Cancer of the rectum, too extensive for removal, palliative inguinal colostomy, 1.

Cancer of the tongue and lower jaw, operation palliative, 2.

Cancer of the face, inoperable, 1.

Cancer of the penis and groin, inoperable, 1.

Cancer of the rectum, not advanced, Kraske's operation, 1.

Cancer of face of limited extent, 3.

Total, 21 cases; one post-operative death, septicæmia after excision of tongue and lower jaw.

As has been said, this list does not embrace cases of benign neoplasm nor those sent into my service direct by others or by myself. If we include the inoperable cases which applied and were admitted to the incurable wards or refused admission thereto because of lack of room, we should add 22 cases, making a total of 43.

It has been my custom, of late, to divide operable cases, after operation, into three classes.*

1. Those in which the disease is so limited that it is thought reasonably probable that it is entirely excised and that the patient has a fair prospect of cure.

2. Those cases in which the surgeon is doubtful, after removal, whether he has gone beyond the limits of invaded tissue.

3. Cases frankly incurable, in which a palliative operation affords a fair prospect of adding to the life and comfort of the patient.

That some such classification would seem both reasonable and desirable is evident when we come to compute, after a term of years, percentages of the radical cure of cancer. Let us take, for example, that common seat, the female breast. It is manifestly unjust to include in the same category a case in which the cancerous lump in the gland was no larger than a walnut, the axillary glands being free from invasion, and one in which the entire breast is a solid mass of cancerous tissue and the glands of the axilla markedly involved. In the first instance, wide excision of the gland and a thorough dissection of the axilla offers the patient a very good chance of permanent cure.

In the second case operation must be judged purely palliative.†

As illustrative instances of this division I may be allowed to cite the following cases recently under my care at the Cancer Hospital:

CASE I. *First Stage.*—Mrs. Y., a lady of seventy years, was referred to me, in January, by her family physician on Long Island.

Two months previously she had noticed a small lump in the right breast. Examination revealed a hard nodule of the size of a small pullet's egg, just above and without the nipple. Nothing felt in the axilla. Operation: Excision of the entire breast, pectoralis fascia, and axillary contents. A few slightly enlarged glands found in the axilla. Primary union under one dressing.

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* Read before the Medical Society of the County of New York, March 26, 1894.

* It is needless to say that no sharp lines can be drawn in any such division. One estimates an individual case as best he can.

† These palliative operations are to be recommended whenever we feel that the patients can thereby be rendered more comfortable, due estimate being made of mortality risk.

The pathologist, Dr. E. K. Dunham, reported the breast nodule carcinoma, the axillary glands hyperplastic. Prognosis fairly good.

Case II. *Second Stage.*—Mrs. X., a woman of fifty-eight years, was referred to me by her physician in Massachusetts, in February of this year. Fifteen months ago she first noticed a small, hard lump at the upper outer quadrant of the right breast. This she showed to her physician, who called it "enlarged milk veins." It slowly increased in size and became painful.

Examination revealed a firm mass of the size of a small mandarin orange in the outer half of the breast, freely movable on the deeper tissues. Skin and nipple normal, nothing felt in the axilla. Operation, February, 1894: Excision of breast and axillary contents. A half dozen enlarged glands were found in the axilla, all within reach of investigation being removed. Primary union; the patient went home on the eleventh day. Pathological report: "Carcinoma of breast and of the axillary glands. There is a good zone of healthy tissue on all sides of the tumor." Prognosis dubious, as one can not assume that all glandular involvement was removed.

Case III. *Third Stage.*—Mrs. Z., a woman of sixty-five years of age, was brought to the hospital by her physician in December last. Fifteen months previously she had noticed a lump in the left breast. This had slowly but steadily increased in size, its growth being watched with interest and without alarm by the patient and her physician. When admitted the breast was a solid mass of evidently cancerous tissue, lightly adherent to the chest wall.

The skin was reddened and adherent, the nipple retracted. A mass of the size of a pigeon's egg was felt in the anterior axilla.

Operation: Removal of the breast, pectoralis fascia, the axillary glands, and a part of the pectoralis major. Even after extensive dissection it was evident that all involved tissue could not be removed. Undisturbed healing.

Pathological report: "Carcinoma of breast, glands, and a part of the pectoralis muscle." Prognosis, recurrence certain.

If, now, we refer to the table of cases to which reference has been made, we see that seventeen, or eighty-one per cent., would fall in the class of inoperable or third-stage operable cases, only nineteen per cent. affording to the surgeon any prospect whatever of a radical cure. And if we add the inoperable cases admitted to the chronic wards or refused for lack of room, we should have of the forty-three cases but nine per cent. which could be placed in the first stage. It may be thought unfair to add these latter cases, as the knowledge that the Cancer Hospital provides accommodation for a number of incurables leads many such to be sent to it for shelter; but I am sure that the contention that the vast majority of operable cancer cases reach the surgeon too late to warrant expectation of cure is one that will be shared by all who have to do with active surgical work.

I have purposely refrained from speaking of the therapy of these cases or making any allusion to ultimate results. I am quite content at this time to call your attention, as has been done so many times before, to the fact that if we are to cure cancer we must attack it very early, while the disease is yet essentially local.

MIDDLE-EAR OPERATIONS.

By GORHAM BACON, M. D.

Operations on the middle ear, consisting in removal of the drumhead, wholly or in part, excision of one or of all the ossicles in cases of both chronic purulent and chronic catarrhal otitis media, have been performed frequently during the past seven or eight years by many otologists in this country and abroad, the results being studied with much interest. We are gradually arriving at some definite conclusions.

In regard to the removal of the remains of the drumhead and of carious ossicles in cases of chronic purulent otitis media, where other methods have been tried and have failed to effect a cure, I believe that most surgeons are agreed as to the propriety of recommending such an operation. If after the use of the middle-ear syringe, of cleansing and antiseptic solutions, and of astringents, we fail to cure the discharge, there is no reason why the usual surgical treatment adopted for other carious cavities should not be practiced here, in order to effect proper drainage. This operation can be performed in such cases in a few individuals without general anæsthesia, by means of the local application of cocaine. In children and in adults, as a general rule, it will be useless to attempt such an operation without first giving ether.

Schwartze, in his *Deutsche Chirurgie*, advised removal of the drumhead with extraction of the malleus and incus in cases of chronic purulent inflammation of the middle ear with caries of the ossicles, and in cases of cholesteatoma of the middle ear. In this class of cases we have the best chance of curing the discharge by an operation, and frequently the hearing distance will likewise be much improved. In cases of long-standing suppuration, however, attended with more or less extensive caries of the walls of the middle ear and antrum, it will be necessary to go further than this operation in order to reach the seat of the disease. To accomplish this we must do a "Stacke operation"—viz., displace the auricle forward and remove a portion of the upper wall of the external meatus—or we must cut down upon the antrum from behind the auricle, and in this way remove any cheesy matter and scrape with curettes all the carious bone. It has been my practice to do the latter operation, and in some instances it is necessary to keep the patients under observation for a long time before ultimate recovery is assured. It is highly important to attend most carefully to the patient's general health. Tonics, cod-liver oil, and a nourishing diet should be prescribed. Tuberculosis, syphilis, and scrofula are important factors in many cases of chronic purulent otitis media.

It is not to this class of patients that the writer wishes to direct attention, but to those patients suffering from chronic catarrhal otitis media, the so-called sclerotic variety. In such, various operations have been proposed and practiced from time to time—such as excision of a piece of the drum membrane, which was first performed in a scientific manner by Himly and Sir Astley Cooper. These surgeons were encouraged at first by the favorable results which they obtained, but finally abandoned the operation, as the artificial openings generally closed and the former degree of deafness returned. Gruber published a paper on myringodectomy in 1861. Other operations have been division of the tensor tympani muscle and division of the folds of the drumhead. Wreden recommended the excision of a portion of the handle of the malleus, so as to cut off some of the blood supply, and in this way prevent the reforming of the cicatricial tissue. Incisions have also been made with cauterization of the edges of the wound, so as to maintain a permanent opening.

Simrock advised making an opening in the membrana tympani by means of the application of a drop of sulphuric acid on a probe. The galvano-cautery has also been used for this purpose.

Of late years the operation of excision of the membrana tympani and of one or more of the ossicles, first advocated by Kessel and afterward by Schwartze, has been revived and performed by many surgeons in this country and abroad for the relief of deafness, tinnitus, or vertigo, with various results by different observers.

The latest operation to receive the attention of the profession has been stapedectomy. At the annual meeting of the American Otological Society held July, 1892, Blake read a paper on Middle-ear Operations, in which he advised the removal of the stapes in cases of chronic dry catarrh, and said: "My own experience in this matter includes a series of experiments in various cases, beginning with the observations having reference to the diagnostic value of high musical tones, extending up to the present time and including operations in the following sequence:

"1. Excision of the posterior segment of the membrana tympani, allowing the sound waves to fall directly upon the stapes.

"2. Formation of a flap from the posterior segment of the membrana tympani and attachment of it to the descending process of the incus, for the purpose of transmitting the vibrations of the membrane directly to that bone.

"3. Division of the incudo-stapedal articulation through a small triangular opening in the membrana tympani.

"4. Attachment of a flap from the posterior segment of the membrana tympani to the head of the stapes, the incus being either wanting or removed.

"5. Division of the incudo-stapedal articulation in cases of existing perforation of the membrana tympani, division of the stapedius muscle and of mucous folds or adhesions.

"6. Removal of the stapes itself."

Blake's conclusions were as follows: "Mobilization of the stapes, including stapedo-tenotomy and division of adhesions, are of value in cases the result of suppurative disease, where the mobility of the ossicle may be maintained either by occasional after-treatment or automatically, by making it the point of touch of an artificial membrane; and that the same procedure—surgical mobilization—is of comparatively little value in the chronic nonsuppurative disease of the middle ear, either when the attempt is made to secure also a permanent opening in the membrana tympani or to connect the stapes with the membrana tympani either by flap or cicatrix; and therefore of the surgical operations proposed for the improvement of hearing and the relief of tinnitus in severe cases of chronic nonsuppurative disease of the middle ear, the disarticulation and removal of the stapes, although it seems the more heroic procedure, is one likely to be of more lasting benefit than the removal of the incus, or malleus and incus, or than merely tentative efforts at mobilization."

Dr. F. L. Jack read a paper at the same meeting of the American Otological Society on Remarkable Improvement in Hearing by Removal of the Stapes. Jack's investigations were carried on at the Massachusetts Charitable Eye and Ear Infirmary at the same time with those of Dr. Blake, but independently. Most of the cases he reported were patients suffering from a chronic suppurative inflammation of the middle ear, although some of the patients operated on had a chronic catarrhal otitis media. In the latter class of cases Jack found some improvement follow the operation of removal of the stapes, but his most brilliant results were obtained in the cases of chronic suppuration.

In the discussion that followed the reading of these papers, Roosa said that "two years ago, in Berlin, Professor Lucae, who has probably performed more operations on the ossicles than any other, told him that in nonsuppurative inflammation of the middle ear he had abandoned the operation of removal of the ossicles, as so many cases were made worse and it was so difficult to make a prognosis."

Blake, subsequent to the reading of his paper before the American Otological Society, published several papers in the *Archives of Otology*, in which he has reported his results in cases of removal of the stapes; and in vol. xxii, No. 4, 1893, he sums up as follows: "The operation of the removal of the stapes does not answer the purpose which might be hoped from it in cases of chronic nonsuppurative disease of the middle ear. In all the cases of nonsuppurative disease in which the stapes was extracted entire the hearing was definitely and practically improved in one only." Blake obtained better results in some of the suppurative cases, but says that "it does not at all follow that the same, or at least sufficiently satisfactory results, could not have been obtained by the minor operations effecting a mobilization of the stapes or of the ossicular chain as a whole, and consequently maintaining that mobile condition by artificial means."

My own observations include a number of cases operated on, most of them being cases of excision of the drumhead and malleus, or drumhead, malleus, and incus, leaving the stapes *in situ*.

My results agree with those of Blake, that in patients suffering with chronic nonsuppurative disease, the operation of stapedectomy is not advisable. We are too apt in this class of cases to find the foot plate of the stapes united by bony ankylosis, and when trying to extract the stapes we simply break off the crura.

Bezold has reported a case of removal of the stapes in the *Archives of Otology*, October, 1893, where the result of the operation for the first few days was absolute deafness. After three weeks some hearing returned, but remained always much less than before the operation. The operation was done under cocaine, and was not painful. At the moment of removal the patient sank on the other side with a sigh and became pale. Excessive giddiness lasted three days. Bezold concludes by saying that "it seems important to publish this case as soon as possible, to warn others against unfavorable results."

In excision of the drumhead and of one or more of the ossicles, I have had fairly satisfactory results in only four cases. In these, the hearing for the voice was considerably improved in two cases, and but slightly improved in two cases.

I can not agree with those surgeons who assert that the operation of removal of the ossicles, even if it is not productive of benefit, will at least not make matters worse, for I have in mind one case in which I operated, and which seemed to be an ideal case for such an operation, the malleus and incus being bound down by adhesions. Not only was there no improvement in the hearing to speak of, but after the operation a distressing tinnitus persisted.

I have under observation a neurasthenic patient who had the malleus, incus, and entire membrana tympani removed by a surgeon in another city, and who has been under my care since then. She was told that the hearing would not be made any worse by the operation, even if no improvement followed. Such was not the case, for she had a severe otitis media as the result of the operation, and the hearing has been decidedly worse since then. Dr. B. A. Randall, at a meeting of the American Otological Society in 1892, reported a case where suppuration, mastoid empyema, and burrowing abscess of the neck followed excision of the membrane and malleus for catarrhal deafness.

Others have been reported where unfavorable results have followed the operation, so that we should bear these cases in mind when advising a patient as to the propriety of removal of the ossicles.

In the light of my own experience, and in that of others both here and abroad, I think that we should not resort to excision of the membrana tympani and ossicles in cases of chronic dry catarrh until we have exhausted all other methods of treatment at our command. Before deciding as to whether removal of one or more ossicles is advisable in a certain case, we should perform under cocaine what Blake has called an "exploratory tympanotomy." By making an incision in the drumhead and opening the tympanic cavity, we can note as to whether this operation increases the hearing distance, and the effect, if any, on the tinnitus or possible vertigo. We can then apply cocaine to the middle ear, and examine more carefully as to whether the ossicles are bound down by adhesions. These adhesions can then be divided as well as the tensor tympani and the results observed, so that we can decide more clearly and with better judgment as to the advisability of a further operation—viz., removal of the membrana tympani and of one or more ossicles.

In some cases, however, it will be necessary to give an anæsthetic before doing an "exploratory tympanotomy."

Howard University, Washington.—The annual commencement exercises of the medical, dental, and pharmaceutical departments were held on Wednesday evening, the 11th inst.

THE DOCTRINE OF SIGNATURES, AND SOME OF ITS MODERN ASPECTS.*

WITH A REFERENCE TO DR. WILLIAM A. HAMMOND.

By J. S. LEONHARDT, M. D.,
LINCOLN, NEB.

The sixteenth century of our era marks a notable and important epoch in the evolution of human progress. Human thought, that had groped about in the weary hours of a mental night over a thousand years long, now rejoiced in the full dawn of an intellectual day. Great schools of learning at Antwerp, Venice, Rome, Bokhara, and elsewhere were reviving the spirit of the Augustan age. In striking contrast with this enthusiastic restoration of literature, art, and most of the sciences, stands the art of healing; medicine did not seem to have any part in the general resurrection. Aside from Linacre in England, Vesalius in Belgium, Falloppius and Eustachius in Italy, Paré in France, and Servetus in Spain, each surrounded by an insignificant number of disciples, medicine had not yet emerged from the cell and keep of the priest and magician. A strange and tenacious fancy that had existed since the twilight of history was now in the high noon of its popularity. I allude to the doctrine of signatures, which completely dominated the medical thought of the day and which was most ardently promulgated and cleverly defended by Paracelsus, Crollius, Porta, and Böhme, who first raised it to the dignity of a theory.

The doctrine of signatures embraced two departments—the celestial and the terrestrial. Ancient Egyptian mythology, with its seven mystical cows, and the anthropomorphic ideas of the latter-day Greeks, fitted conveniently into the then prevalent notion of correspondences and similars. The gamut of Greek deities was accordingly made the connecting link between astrology and alchemy by confirming the existence of a double relationship between the planets of the same names and the metals. Amulets of pure gold, usually of a triangular shape, stamped with astrologic and hermetic characters, were worn suspended from the neck in order to protect the wearer from the evil influences of subtile poisons or malignant spirits. The talmudic and cabalistic Jews wore phylacteries in the same manner and for the same purposes. The ancient Egyptians made a similar use of a cruciform emblem, the sacred ♀ (*tau*) and a species of *scarabœus*, emblematic of immortality. Even the great Pericles wore his amulet thus. The anodyne necklace of Dr. Chamberlayne, in such good repute among English mothers and nurses during the sixteenth century, was an expression of the same idea. The Bedouin Arab of to-day still wears a metallic charm, while the poor Philippine Islander contents himself with the less attractive but more potent bean of Ignatius. Sometimes these periapts, with their mystical sigils, were steeped in wine, which was then drank—a practice that still survives in the lee-penny of Scotland. Upon special occasions the Hebrew or Greek name of the Deity, Adonai or Tetragrammaton, embellished with triangles and compound comminuted crosses—symbols of truth and God—were written on pancakes and swallowed for the relief of persons suffering from unruly spirits. This practice still obtains in a modified form among the nomadic Tartars of Asiatic steppes, who, for the purpose of making their prayers more effective, write them on slates, wash them off, and drink the dirty water. A bridegroom in the middle ages, if at all advanced in the education of his time, would not think of repairing to his nuptial couch without wearing his consecrated silver ring, stamped with esoteric figures fitting such an auspicious event. A similar astrologic observance attended the marriage of the ancient Aztec. And to-day every one entitled to wear a shell from Joppa has heard of the wonders Solomon performed with his cabalistic ring. The knight who entered the lists or undertook a perilous journey was doomed in advance to defeat or chagrin unless his steed wore a bridle made of lion's skin, which gave his horse both strength and speed. Scorpions had no terror for him who wore upon his person the sign of Scorpio.

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* Those interested in a further examination of this most unique theory, which in its day amounted to almost a philosophy, may consult with profit the following works: Paris, *Pharmacologia*, New York, 1824; *Dublin University Magazine*, vols. li and lxviii; Hermann Kopp, *Die Alchemie*, Heidelberg, 1886; Liebig, *Handwörterbuch der Chemie*, Braunschweig, 1842; Hermann Kopp, *Geschichte der Chemie*, Heidelberg, 1844; Ennemoser, *History of Magic*, London, 1854; Wilkinson, *The Ancient Egyptians*, New York, 1854; Knight, *Ancient Art and Mythology*, New York, 1876; Jennings, *Rites and Mysteries of the Rosicrucians*, London, 1887; Draper, *Intellectual Development of Europe*, New York, 1876; *Proceedings of the Society for Psychical Research*, London, etc.

Their earthly materia medica contained every known and accessible object in the three great kingdoms of Nature. They believed that all plants, minerals, and animals, or parts thereof, that were designed for the use of man indicated their particular application by some external or internal peculiarity either of form, color, mark, or resemblance; that these objective qualities corresponded to definite parts of the body, suggested prominent clinical features of some disease, or bore the impression of some alchemistic or astrologic symbol or sign which mystically governed the same. They taught that Nature had so marked these things that man by his reason might determine their several uses to him. They affirmed that this object could not have been effected more perfectly by any other means—"not even by speech, since no language is universal." Those whose education enabled them to read these signatures of Nature and interpret the occult relation existing between the objects that bore them and the cure of disease were dubbed "Nature's principal secretaries." Boyle, the great Earl of Cork, said: "Chymists observe in the Book of Nature that those simples that wear the figure or resemblance (by them termed signatures) of a distempered part are medicinally for that part of that infirmity whose signature they bear." Any substance that could not be so read and translated was pronounced inert or noxious.

Turmeric, *Indian saffron*, on account of its yellow color, was said to be a specific in jaundice. The capsule of *Papaver somniferum* was regarded as specially designed for diseases of the head. *Agaricus*, a cryptogamous fungus, because of its bladderlike pileus, was supposed to be good for bladder diseases. *Cassia fistula*, an Oriental tree bearing yellow flowers and legumes about two feet long filled with seeds imbedded in a black pulp, was used in intestinal diseases. Aristolochia, *birthwort*, probably on account of its indicative etymology, was the remedy for uterine ailments and disorders attending parturition. The seeds of the common gray millet, *Lithospermum officinale*, on account of their pearly whiteness and marblelike hardness, were supposed to be good in calculous affections. It was asserted and for a long time believed that when these seeds were placed in vinegar they would effervesce, thus establishing their calcareous nature. All spotted or blistered vegetables were considered good for the lungs, since these organs have a mottled and blisterlike appearance. Euphrasia, because of the dazzling brightness of its little white flowers, and for the extra reason that its corolla bears a black spot like the pupil of the eye, was a sovereign remedy in diseases of the eye. *Crocus sativus*, the famous *zahafaran* of the Arabs and *carcom* of the Jews, because of its yellow blossoms and golden tincture, was the remedy, above all others, for forcing out variolous pustules and curing biliousness. A tea made of the stinging nettle, *Urtica dioica*, was prescribed in urticaria and doubtless other forms of pruritus. Thus also the petals of the "blood-red rose," as well as hematites from Ethiopia and Arabia, were employed in blood diseases. Ginseng, a remedy still very popular in Tartary and China, was regarded as of such value in all forms of mental and physical debility that the respect paid it almost amounted to veneration. In addition to its aphrodisiac power, it was looked upon as a sure eradicator of old age, a drug that contained the "pure spirit of immortality." So rare and valuable was this remedy in these countries in the olden times that it was used only on patients of quality, and then sold for its weight in gold. Strange to say, it was used for the same purposes among the North American Indians. The Iroquois name for it means "a child," and *jin-seng* in Chinese means "resemblance to a man." Mandrake, when forked, on account of its fanciful likeness to the body, and, when straight, to the phallus, was used as a sexual stimulant and against the curse of barrenness from remotest antiquity. It was a common ingredient of love philters and often invoked in amorous incantations. Students of archæology will recall the effect of Reuben's mandrakes on Rachel.* Leaves of the kidneywort, from their resemblance to a kidney, explain their use in renal complaints. The modest forget-me-not, because its spike looks something like the end of a scorpion's tail, was considered curative in the sting of that animal. For the same reason the fungus known as Jew's-ear, in size and shape much like a human ear, was used in diseases of the ear. All plants bearing stellate flowers were in special demand. *Lapis ætites*, a hollow ferruginous stone containing a free nucleus, was used since the days of Pliny and Dioscorides; suspended above the uterus, it prevented abortion; suspended beneath it, it facilitated labor. It was supposed that the eagle placed these stones among its eggs when hatching to prevent their decaying. In addition to vegetable remedies in hepatic diseases, they used wolf's liver, or the liver of an ass pounded in honey. Zwelfer extolled the virtue of amulets made of compressed toads as prophylactic against carbuncles, buboes, and the plague. Van Helmont, the eminent Belgian chemist, suffering from a severe fright caused by a toad, did not trust to toad lozenges, but cured himself by taking powdered viper mixed with molasses. Dried deer tears were used in their battle against hysteria, in the treatment of which some of our homœopathic friends of to-day use *lacrima filiæ.* Consumptives and asthmatics were treated with prepared lung of fox or wolf. Anæmia yielded to blood of bat, rat, or rhinoceros. We once used *sanguis bovinus exsiccatus!* Boyle was "radically" cured of an obstinate epistaxis by applying to the skin until it got warm the moss of a dead man's skull. By a more or less logical extension of their system, they were able to displace the legitimate function of cats by substituting their images made of lead. To keep the rot from affecting their sheepfolds, they set up in the pastures artificial sheep skillfully molded in clay. Flies would light on no man who wore any charm of steel. The duelist, wounded by the sword of his adversary, anointed the weapon of his foe with a magic salve instead of applying the unguent to his own perforations. Moles on the face disappeared under the touch of a dead man's hand if it was allowed to remain long enough to get warm.

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* Genesis, xxx, 14.

To supply their materia medica all Nature was laid under tribute, from the majestic iceberg to the somber graveyard. Their pharmacies must have exceeded in horror the forbidden chamber of the celebrated Bluebeard, and their "medicine making" during many a *Walpurgis night* doubtless surpassed in weirdness the famous witches scene in Macbeth. Human bones, fat, blood mixed with triturated carrion, flies, and attar of roses; every organ and every secretion and excretion; different parts of apes, lions, dogs, scorpions, eels, spiders, serpents—in fact, every indigenous animal and many that were foreign—all these things, singly and in endless combinations, were their weapons against disease. And this vile stuff was used solely because of a mystic relation supposed to exist between it and disease in its various manifestations. And this incongruous belief not only permeated every phase of their social fabric, but actually was the pet of regal patronage and everywhere the curled darling of prosperity.

That Hahnemann obtained his ideas of homœopathy from the residuary of the ancient estate of alchemy and the doctrine of signatures can hardly be questioned in the light of history. His theory of infinitesimals was used long before him by alchemists, who taught that the least conceivable quantity of their royal elixirs was sufficient to transmute the baser metals into silver and gold. Many of the nasty things then used are still employed by homœopathists, and, unless Hahnemann was the victim of heterophemy, *similia* clearly betrays its lowly origin in the doctrine of signatures. In evidence of this may be cited such remedies as *crotalus horridus, lachesis, bufo, carbunculus, fel suillum, fel tarantula, pyogen; ovi membrani,* to induce menstruation always at the full of the moon; *loimine,* pest virus; *sal cerebri,* salt secreted from the scalp of a gentleman; *seriaca Barlowii,* made from a silk handkerchief that had been swallowed by a cow, in whose stomach it was found after three years, during which time she never had a calf (inference, *ad libitum*); *verruca menstrua,*[*] menstrual blood from a woman who had warts; and so on till nausea ensues. Quite recently I noticed in a medical periodical that plants bearing blue flowers were brain sedatives; those having red flowers excited nerve action, increased congestion, and acted specifically on the hæmatopoietic system; and those having yellow flowers were particularly good in liver troubles.[†]

During the last few years it has been quite a popular medical fad to administer the juice of certain animal organs for the relief or cure of disease affecting similar organs in the human being. This idea is nothing more and nothing less, in my opinion, than the same old malady of signatures and correspondences in a modern exacerbation. Is it not a strange irony of history to see the sepulchered vagaries of a dead past again rehabilitated by members of enlightened communities in this brilliant age? The doctrine of signatures in its entirety is so completely hidden under the dust and grime of centuries that it is difficult now to even collate its literature; yet the spirit that gave this grotesque empiricism a name in history not only survives in our modern museums, schools of medicine, and credulous laymen, but, when animated by the genius of Paracelsus, defiantly flaunts its offal-stained banner in the very peristyles of our scientific schools. The revival of ancient faiths and mysticism, together with a tacit acceptance of mediæval pseudo-science and philosophy, is a remarkable part of present history. Belief in mascots, charms, magic rings, ghosts, the power to communicate with those who have returned to unconscious dust, prophecy, incantations, philters, elixirs of life, animal magnetism, stellar influences, lucky days, the doctrine of signatures—all these and a hundred other inanities show an extraordinary trend of thought in the closing years of such a century as this has been.

The origin of Dr. Hammond's animal-extract idea, therefore, it seems to me, is not enveloped in the impenetrable darkness one would infer from reading his contributions on the subject. The pregnant past has brought forth other men who practiced the theory of that one German physician of whom Dr. Hammond remembers reading about some forty years ago, whatever length of time that may mean. Dr. Hammond is afflicted with philosophic atavism, the pathognomonic symptoms of which are none the less conspicuous for his having masked them in terms of modern scholasticism or verbal neoplasms of his own. His dexterous defense of these antiquated notions, while supporting his pet selection of them—the truth of which he sought to establish by means of physical demonstrations—and his evasive answers to my criticisms, compels a final notice of his diatribe in the *New York Medical Journal* of November 18, 1893.

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[*] Swan. *A Catalogue of High Potencies,* New York.

[†] *Medical Review,* St. Louis, quoting *The Medical World,* Philadelphia.

As to the length of time he had used the sphygmographs of Marey and Pond, he admits that he was a little extravagant with the truth, but adds, with much indifference, "But what does it matter ?" and commends to my consideration an alleged legal maxim. Physiological research would have but little scientific value conducted by one thus careless of the element of time; this may not have been true when Dr. Hammond filled the chair of physiology in the medical department of the University of Maryland in 1860, but it is now. While I am digesting the Latin quotation assigned me, I would call his attention to the fact that common law recognizes such a thing as gross carelessness and criminal ignorance. I commend to his prayerful attention the interview between Pantagruel and the Limosin.*

In the sphygmogram taken from Brondel (an author of whom I know about as little as Dr. Hammond does of Dr. Dudgeon) we have another delightful instance of his "lumping-off" process. The reader is left to guess at the age and physical condition of the subject preceding the hypodermic injection of an exceedingly liberal dose of pilocarpine. We infer that the pure alkaloid was used, but he may have meant any one of its six or seven salts. We are also wholly in the dark as to the object of that injection, whether therapeutic or experimental, and as to the *time* element in the case. If the tracing was taken soon after the injection was given, at the *time* when flushing of the skin, fullness of the head, and redness of the face and neck occur, then it was taken during the stage of the drug's primary action, when it really does stimulate the heart † Add to this slight stimulation of the heart a decided lessening of the peripheral resistance, and you have in the primary physiological effect of pilocarpus all the requirements of a first-class, quickly-acting cardiac stimulant. If the drug were never urged beyond this initial effect, we should have a heart tonic that would compare very favorably with atropine and trinitrin. Now, then, if the instrument with which the Brondel tracings were made moved the recording surface with equal speed in both instances, the most casual examination will show that the heart beat about one tenth more rapidly and the pulse waves were about twice as ample after the use of pilocarpine. If *time* and distance amount to anything in matters of this kind, and the primary effect of pilocarpus is taken into account, the cause of the "excessive" verticality of the second tracing as compared with the first becomes obvious, especially when made with an instrument of the Marey type. As I have said in a former article, the recording needle in this class of sphygmographs always describes the arc of a circle whose radius is equal to the length of the lever producing it. In most of these instruments the slide moves toward the center of this circle. Therefore, if the slide moves at all, the arc traced will depart from its normal curve in a degree determined entirely by the speed of the slide and the *time* required for the lever to reach its greatest altitude. He who uses a Dudgeon sphygmograph does not have to contend with these variations, because the recording needle in this instrument is made to move in a *perpendicular* and *straight* line. Dr. Hammond asserts that nothing is more absurd than to compare the results obtained by one sphygmograph with those obtained by another. Dr. Baumgarten does not seem to think so.* But "What does it matter ?" the valiant champion of cardine will doubtless reply; "in regard to the sphygmograph, I have never put much confidence in it." Dr. Hammond seems to forget that in a former paper he sought to confirm his statements regarding the heart-tonic properties of cardine by means of this very instrument, and said it did very clearly. Now that it has ceased to answer his purpose, he quotes it as being untrustworthy.

In regard to my own sphygmogram, of which Dr. Hammond speaks in an exceedingly facetious manner, he is more amusing than correct. He should remember, if possible, that when the subject breathes regularly during the taking of a sphygmogram the tracing will show a respiratory curve, if the instrument used is sensitive enough to be influenced by respiration. The depressed portion of the pulse waves in my tracing corresponds with the act of inspiration. If he will measure and compare the several curves he will find that the variation is in strict accord with that of a typically normal tracing, in which the up strokes are nearer together in inspiration by about 0·06 second. Another reference to the monumental work on physiology by Landois and Stirling † will discover two sphygmograms—one made by Dudgeon's and the other by Marey's sphygmograph—both of normal pulses under equal pressures. My personal tracing is as nearly like the one made by Dudgeon's instrument as can be; the other, taken with Marey's instrument and also termed normal, does not bear the slightest resemblance to the alleged normal sphygmogram in Dr. Hammond's first article on cardine. As to the comparative ability of the two instruments to duplicate what actually occurs in the circulation, let the reader compare the two tracings with the hæmautographic curve shown in the same work; let him also notice that the learned authors still continue to use Dudgeon's instrument for the elucidation of physiological events, even if Broadbent does not trust it. My heart is not affected with any of the pathological conditions mentioned by Dr. Hammond, since there is no evidence of irritability, intermittency, excessively low or high tension, or abnormal speed, one or more of which conditions are always present in any form of cardiac disease. I call my personal tracing normal, and again challenge Dr. Hammond to prove the contrary by any rule of sphygmography or process of reasoning whatever.

The reader of Dr. Hammond's articles on animal extracts will have noticed another fact that concerns cardine just a little; it is in the nature of a "control experiment," and proves cerebrine more powerfully cardiac than cardine itself. In from five to ten minutes, or even less, after an injection of five minims of cerebrine, the pulse became fuller and stronger, and increased about twenty beats to the minute. So potent is this brain extract that a single five-minim injection will project its influence through a space of several days. In about ten minutes after a five-minim injection of cardine the pulse increased *seventeen* beats to the minute, while the dynamic inertia of the extract began to lessen in about *eight hours.* Another peculiarity must have arrested the reader's attention: I refer to Dr. Hammond's overweening modesty. His reference to "sciolists who rush in with heavy foot where angels should tread lightly" is a delicately worded warning with a commercial margin to all who might attempt to manufacture these extracts. His yielding priority of the idea to an unknown German physician, after remarking that the two systems (?) do not admit of comparison, is self-sacrifice personified. For him to say that the isolated observations made in the last two or three years by German and French collaborators, while in accord, to some extent, with his own, lacked system and were barren of definite results, is deliciously exclusive.

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* *The Works of Rabelais*, Book II, chap. vi.

† Potter. *Materia Medica, Pharmacy, and Therapeutics*, fourth edition, Philadelphia, p. 319.

* *Reference Handbook of the Medical Sciences*, vol. vi, p. 87.

† Landois and Stirling. *A Text-book of Physiology*, pp. 119, 120.

Since Dr. Hammond has been kind enough to diagnosticate my multiform affliction, it would be ungrateful in me not to offer some recognition of his service. If Dr. Hammond is "a victim of heterophemy," he is also afflicted with word-blindness; both of these symptoms are regarded as significant indications of primary mental deterioration. I shall not be so cruel as to refer him to some specialist in mental diseases, but will simply ask him to review the treatment (with a view to its personal application) he advised in the case of a certain "literary gentleman of distinction, who spoke with a good deal of volubility, but constantly used the wrong expressions," who, when he wished to say that "he had visited Europe for the benefit of his health," said, "I went to Elope for the bequest of my hedge." *

A CONSERVATIVE TREATMENT FOR GONORRHŒA.

WITH REPORT OF TWENTY CASES.

By H. ELLIOTT BATES, M.D.,

POUGHKEEPSIE, N. Y.

The ancient and time honored statement that the more numerous the agents and methods put forward for the treatment of a diseased condition, the greater the probability that that condition is imperfectly understood and imperfectly treated, seems to apply with special force to that inflammation of the urethral mucous membrane known as gonorrhœa.

Drug after drug has been said to be a specific. Different methods of treatment—abortive, methodical, expectant, by irrigation, injection, electricity, and so on through the entire range of therapeutic resource—have been discovered, published in the various journals, received a trial, and given more or less satisfaction or disappointment. Meanwhile the victim of this well-intended experimentation goes as often to the drug store or charlatan as to the regular practitioner.

The writer of this article would feel some hesitation in adding to the subject were it not for the fact that, after what he believes to have been a fair trial, results have been attained which will justify the presentation of the method of treatment, conservative as it may claim to be, before the profession.

The twenty cases here reported have not been selected, but taken as they were put down upon the case-book.

The conservative treatment herein presented is based upon the indications and principles of treatment of any inflamed mucous membrane.

Catarrhal inflammation of mucous membranes may be acute, subacute, or chronic.

Congestion, dryness of the surface, subsequent mucopurulent or purulent discharge, desquamation of superficial epithelial cells, mucoid discharge, and recovery of the normal tone, or passage into a chronic state, is the clinical history of such conditions, be the inflammation that of bronchi, stomach, or urethra.

Simple non-specific urethritis, like bronchitis, runs a short course, with mild symptoms and brief duration.

The specific form of urethritis is contagious, but resembles in its course, symptoms, and results the simple form, with this difference, that it is virulent, obstinate, and prone to leave sequelæ. Nevertheless, if left severely alone, it will often result in complete recovery.

It is true that the past history of many strictures contains an attack of gonorrhœa which is said to have caused the stricture, but the writer is forced to believe from his experience that the stricture is often due to the treatment given the gonorrhœa, particularly to the strong injections, rather than to the influence of the disease itself. For the writer has yet to see a case of stricture which followed a simple, uncomplicated attack of specific urethritis unless strong injections have been employed.

That a complicated attack may and does produce stricture, independent of powerful injections, is proved by Case III of the table in this paper.

We do not seek to abort an attack of bronchitis any more than we attempt to check secretion in its primary stage by strong astringents. Why should we seek to do it in gonorrhœa?

In the experience of the writer specific urethritis has a stage of incubation averaging four days; an acute stage, averaging fourteen or sixteen days; and a subacute stage, averaging fifteen days, ending in recovery after a total average duration of thirty-one days.

The indications for treatment are those for the inflammation of any mucous membrane:

1. To relieve irritation, minimize the congestion, and subdue the inflammation.
2. To allow the acute stage to subside and correct the tendency to catarrhal flux by *mild* astringents.
3. To prevent development of the chronic stage and sequelæ by removing any causes operating to produce them.

To attempt to abort the disease seems unscientific, irrational, and contrary to indications or experience.

To check or stop purulent discharge is impossible. Agents are employed *of a strength sufficient to destroy not only pathological products but normal tissue as well.*

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* Hammond. *Diseases of the Nervous System*, New York, 1890, pp. 180, 181.

If left to its natural course, the inflammation not added to, the purulent discharge changes to a muco-purulent or mucous oozing.

Then, and *not until then*, may injections be expected to do *only* good, and these should be extremely mild.

Then, if the discharge still lingers, it is due to patches of diseased tissue which injections will not and can not reach, but which the steel sound will soon dissipate, with prompt improvement.

Agents like oil of sandalwood, copaiba, or cubebs irritate the stomach and kidneys and are plainly contraindicated. The writer has never employed them. The experience gained by him while in the venereal department of Chambers Street Hospital, where an almost infinite variety of cases receive corresponding treatment, led him to adopt the following method of treatment, the results of which he believes will compare favorably with any yet given:

The patient is ordered to procure and wear a suspensory bandage until discharged cured. Indulgence in tea, coffee, stimulants, suggestive conversation, literature, pictures, and the like, as well as any active exercise, is prohibited. The diet is simple and curtailed, the bowels are kept open, and milk with Vichy water taken *ad libitum*, also Londonderry lithia water. Unsweetened lemonade and the following mixture, to render the urine alkaline, limit the ardor urinæ, and prevent chordee, is all the treatment given in the acute stage:

℞ Potassii acetatis, }
Potassii citratis, } ....āā ʒ vj;
Sodii bromidi.................... ℥ j;
Ext. hyoscyami fl.................. ℥ ss.;
Spts. ætheris nit................. ℥ jss.;
Syr. aurantii..............q. s. ad ℥ vj. M.

Of this two teaspoonfuls are taken several times through the day and evening.

The glans penis is wrapped in cotton and the foreskin drawn forward over it.

The bromide of sodium, with now and then a suppository of opium, aconite, and belladonna, usually will prevent severe chordee.

This treatment is maintained until the discharge changes from thick, yellow, and purulent to thin, bluish white or colorless, and without traces of pus or blood.

Up to this time the patient is not allowed to use any injection whatever.

Second Stage.—For three days, morning and evening, the patient injects a small quantity of a solution of hydrogen peroxide diluted with water. At the end of three days the following is given:

℞ Zinc sulphate................. gr. xij;
Boric acid.............. .... ʒ ss.;
Colorless hydrastis............ ʒ vj;
Rose-water.................ad ℥ vj. M.

To be used morning and evening.

In the majority of cases no further treatment is required.

If the discharge lingers, the sound is passed several times, and the results are entirely satisfactory.

The collected twenty cases will show some quite satisfactory results.

1. No stricture ever followed treatment.
2. Average duration, thirty-one days.
3. Complications were seldom met with.
4. Chordee occurred in but four cases; never severe.
5. The cases of simple urethritis received no injections.
6. Epididymitis occurred in two cases. That it did not prove more frequent is probably due to the early use of the suspensory bandage.
7. The same may be said in regard to the enlargement of the inguinal glands.
8. The sound was employed in all cases in which the attack was the second, with prompt success.
9. Gonococci were present in all severe cases.
10. Gonococci were absent in all mild cases.

Case III was reported in the *New York Medical Journal*, September 2, 1893.

No.	Name of patient.	From last intercourse to first symptom.	From first symptom to consultation.	First injection given after consultation.	Discharged after first injection.	Total.	Stricture.	Gonococcus.	No. of attacks.	Complications.	Special treatment.
1	E. W. H.	6 days.	2 days	14 days.	14 days.	30 days.	No.	Yes.	1	Epididymitis.	
2	F. S. E.	1 day.	1 day.	......	16 "	17 "	"	No.	1		
3	C. E. G.	7 days.	3 days.	......	30 "	33 "	Yes.	Yes.	1	Cystitis, prostatitis, paraphimosis, epididymitis, stricture.	See *N. Y. Med. Jour.*, Sept. 2, 1893.
4	W. J. L.	5 "	2 "	16 days.	14 "	32 "	No.	"	1		
5	J. M.	4 "	2 "	15 "	12 "	29 "	"	"	1		
6	C. H. M.	6 "	2 "	17 "	14 "	33 "	"	"	1		
7	W. T. K.	5 "	1 day.	18 "	16 "	35 "	"	"	2	Chordee.	Sound (2).
8	E. H. P.	4 "	6 days.	18 "	20 "	44 "	"	"	2	"	Sound (3).
9	J. W. S.	5 "	2 "	16 "	15 "	33 "	"	"	2	....	Sound.
10	T. J. S.	1 day.	1 day.	......	14 "	15 "	"	No.	1	....	Sound (1).
11	W. F. C.	4 days.	2 days.	18 days.	13 "	33 "	"	Yes.	1	Enlarged gland.	Ung. hydrarg.
12	W. H. M.	7 "	1 day.	18 "	14 "	33 "	"	?	1		
13	J. J. McP.	3 "	2 days.	20 "	12 "	34 "	"	Yes.	1	Chordee.	
14	J. R. G.	4 "	1 day.	......	14 "	15 "	"	No.	1		
15	E. D. L.	1 day.	2 days.	21 days.	13 "	36 "	"	Yes.	2	....	Sound (2).
16	G. D.	5 days.	1 day.	18 "	16 "	35 "	"	"	2	Chordee.	Sound.
17	T. M. S.	6 "	1 "	15 "	14 "	30 "	"	"	1		
18	J. McG.	5 "	2 days.	18 "	14 "	34 "	"	"	1		
19	H. B.	6 "	2 "	18 "	16 "	36 "	"	"	1		
20	J. B.	7 "	1 day.	18 "	14 "	33 "	"	"	1	Enlarged gland.	Ung. hydrarg.
Average........		4·6 days.	2 days.	14 days.	15 days.	31 days.					

THE
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GUAIACOL.

IN a recent discussion before a society of one of our larger American cities some twenty experiments with guaiacol in phthisis, pneumonia, tertian ague, typhoid fever, rheumatic fever, and influenza were reported. The dose was about thirty drops, rubbed upon the skin. In every case the temperature had come down from 104° F. or thereabouts to the neighborhood of 100° within a few hours after the application, and remained down for several hours. In every case, as nearly as the writer can remember the report, there was profuse sweating as the temperature descended. The trouble with the method, however, was that most, if not all, the patients suffered from severe depression of the bodily powers during the fall of temperature, in many cases extremely disquieting to the sufferer. During the discussion of the report other experiences from private practice were related in which the prostration following similar use of the drug had been extremely alarming.

The president of the society being of an amiable disposition, and, although a specialist, not one of those repressive anxious-for strictly-parliamentary-limitation autocrats who make modern society meetings often so intolerably dry to the seeker after clinical aid, the discussion took in the whole subject of temperature reduction in fever. The prevailing sentiment of the meeting seemed to be that reasonable temperatures, say not higher than 103°, had in most cases very little disturbing effect either on the patient's comfort or on the outcome of the disease, and could be sufficiently controlled by absolutely safe remedies, such as diuretics, aperients, and tepid-water spongings. Such elevations of temperature correspond to that overproduction of heat which results from the natural efforts of the tissues to destroy morbific material—the law of life being that all increase of destructive tissue-change is accompanied by increase of heat. So long as this material continues to irritate the tissues the fever must continue, its issue in most cases being in the triumph of the tissues. To check this natural process forcibly without removing the offending matter is an unwise and injurious proceeding on the part of the therapeutist. The only sensible method is to remove the offending matter from the body or, if this can not be done, to strengthen the tissues in their struggle, avoiding all depressing drugs.

In hyperpyrexia, however, where the temperature stays above 104° for days, hurting the heart-muscle, or where the nervous system of the patient is greatly disturbed and the secretions and excretions are checked, we have to do, not with the natural heat-production of the internal contest, but probably with derangement by the hot blood of the nerve centers which regulate the production of heat and its escape from the body. In these cases active interference is demanded. Cool sponging or bathing, and in extreme cases the free use of ice-water and ice to the surface of the body, are to be preferred to the use of depressing drugs. Occasionally the modern febricides may be used for temporary benefit. Here, along with acetanilide and antipyrine, guaiacol may be used, but with great caution until the patient's reaction to them is ascertained. Guaiacol might be tried in smaller doses than those reported—say, less than thirty drops. The remedy which makes the patient stronger and more comfortable, improving the secretions and excretions, and giving sleep, is in every case to be preferred to those which, while they lower the temperature, cause prostration, or at least fail to add to the general well-being of the patient. In family practice, especially, all drugs which might by their depressing effects alarm the patient's friends must, as a rule, be avoided.

Morphine was mentioned as a valuable temperature-reducer when the nervous system is fagged out. Careful, regular feeding is, of course, essential to the patient's recovery

RELAPSES OF TYPHOID FEVER.

DR. HUGH M. STEWART, of Guy's Hospital, London, contributes an article on this subject to the March number of the *Practitioner*, founded in great part on the clinical histories of fifty cases observed in the hospital. He thinks that so-called relapses are genuine second attacks; that they are due to re-infection (infection in a fresh part of the intestine, always at a lower situation and usually in the large intestine) from the patient's own lesions; that constipation is an important predisposing cause of relapse; that relapses occur at a certain definite period—on the average, after an apyretic interval of a little less than six days for first relapses and of a little over thirteen days for second relapses; that relapses are rarely fatal; and that they heighten the patient's immunity from subsequent attacks. While, as has been said, he regards constipation as an important predisposing cause of relapses, he intimates that it ought not on that account to be treated, for the reasons that the prognosis in cases of relapse is good, that the occurrence of a relapse probably confers a higher degree of immunity than a single primary attack, and that treatment of constipation may excite a dangerous degree of peristalsis. Intestinal perforation is far less common in a relapse than in an original attack, partly because the infection is less profound, owing to the partial immunity occasioned by the initial attack, and partly because the large intestine, where the lesions of the relapse are prone to be found, is thicker-walled than the small intestine. Relapses run their course more rapidly than original attacks, as regards both lesions and symptoms, and this fact gives rise to the false appearance of all the lesions being of the same duration at the necropsy.

MINOR PARAGRAPHS.

SOLANUM CAROLINENSE.

This southern plant, popularly known as poison potato, ground-potato, horse-nettle, and tread-soft, has been made the subject of study by Mr. J. U. Lloyd, who gives an account of it in the April number of the *American Journal of Pharmacy.* It appears that the plant is reputed poisonous, perhaps because animals of all kinds refuse to eat it; that the negroes of the South have long used it as a domestic remedy for convulsions and as an aphrodisiac; and that it was brought to the attention of the medical profession in 1889 by Dr. J. L. Napier, of Blenheim, S. C., in a paper read before the Medical Society of South Carolina. Dr. Napier found the root and the berries efficient in checking convulsive attacks, especially those connected with the menstrual period, also in epilepsy, puerperal and hysterical convulsions, and traumatic tetanus. He used a whisky-and-water preparation, but its strength is not specified by Mr. Lloyd. Dr. Napier states that the plant is a very active diuretic, besides being antispasmodic and anodyne. A syrup made from it has a local reputation in Georgia as a remedy for cough. Mr. Lloyd has obtained from the root an alkaloid to which he gives the name of *solnine*, to distinguish it from *solanine*, with which he thinks it is not identical, so far as can be inferred from what is now known, especially from the crystallization of solnine, of which an excellent illustration accompanies the article. It is to be hoped that therapeutical experiments with this new alkaloid will soon lead to more precise information as to its medicinal properties than we now possess.

TERATOLOGIA.

This is the title of a quarterly publication, the work of Dr. J. W. Ballantyne, of Edinburgh, devoted to teratology and antenatal pathology. The first number, dated April, 1894, has reached us. It contains considerable matter of scientific and historical interest.

AMERICAN ACHIEVEMENTS IN SURGERY.

In the April number of the *Forum* Dr. George F. Shrady writes most graphically of the leading achievements of American surgeons. The community needs to be reminded once in a while of what natives have done creditably.

SOME FOREIGN IMPRESSIONS OF THE CONDITIONS OF MEDICAL PRACTICE IN AMERICA.

During the last week two things have come to our knowledge that show curious phases of the notion largely entertained by Europeans that they can come to the United States and enforce among us such regulations as they see fit or abrogate at their pleasure those that we have established. The first is a letter written by a megalocephalic Berlin doctor to the dean of one of our city medical schools in which he says: "Kindly let me know whether the Diploma of Dr. of Medicine of a German University or the certificate as Physician granted by the Government of one of the German States, entitles to the Practice of Medicine (as a registered Physician) in the State of New York. Although I think that it is a matter of course, that German Diplomas are registered there as medical qualifications, because German Doctors are, as you will know, the best in the world and as medical education in the United States of America is not recognized anywhere in Germany, I ask this question anyway to prove that German Diplomas are worshiped and recognised everywhere in the U. S. of America." The other thing was the retort made by one Dobroczynski, on the occasion of his being convicted for the second time of practicing dentistry illegally, to the judge, who had reminded him of his previous conviction. It was this: "In the old country, when a man pays a fine for such an offense as this the fine pays his license, and he can go ahead. I thought it was the same in this country."

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 10, 1894:

DISEASES.	Week ending Apr. 3.		Week ending Apr. 10.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	0	0
Typhoid fever	8	3	3	4
Scarlet fever	158	15	143	20
Cerebro-spinal meningitis	0	0	0	0
Measles	318	24	278	21
Diphtheria	224	56	160	49
Small-pox	33	5	10	7

The American Medical Association.—Dr. H. A. Hare, of Philadelphia, and Dr. W. H. Washburn, Secretary, of No. 803 Grand Avenue, Milwaukee, request us to announce that the officers of the Section in Practice for the meeting of the association in San Francisco will be glad to receive the titles of any papers which gentlemen desire to read at that meeting. They add that a large number of papers have already been promised for the meeting by members of the profession on the Pacific slope, and that it is earnestly desired that an equal number of contributions should come from eastern portions of the country.

Newspaper Anatomy.—One of the city newspapers lately gave an account of an amputation "about half-way between the knee and the thigh."

The Middleton Goldsmith Lecture of the New York Pathological Society will be delivered by Professor William H. Welch, of Baltimore, on Saturday, April 28th, in the hall of the New York Academy of Medicine, on the subject of Mixed and Secondary Infections.

Changes of Address.—Dr. Edward B. Heckel, to No. 524 Penn Avenue, Pittsburgh, Pa.; Dr. Charles Schram, to No. 1074 Madison Avenue.

The Death of Dr. Charles Corey, of Brooklyn, is announced as having taken place on Wednesday, the 4th inst., somewhat suddenly, as the result of pneumonia. Dr. Corey was a graduate of the Medical Department of Dartmouth College, of the class of 1856, and was in the sixty-fourth year of his age. He was an alienist of considerable local renown.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 1 to April 7, 1894:*

The following named officers are detailed to represent the Medical Department of the Army as delegates to the Association of Military Surgeons of the United States, to meet in Washington, May 1, 1894: Forwood, William H., Lieutenant Colonel and Deputy Surgeon General; O'Reilly, Robert M., Major and Surgeon; Corson, Joseph K., Major and Surgeon; Reed, Walter, Major and Surgeon; Phillips, John L., Captain and Assistant Surgeon; and Edie, G. L., Captain and Assistant Surgeon.

Carter, Edward C., Captain and Assistant Surgeon, will proceed at once to Fort Spokane, Washington, and report the commanding officer for temporary duty.

Cleary, Peter J. A., Major and Surgeon, will be relieved from duty at Fort McPherson, Georgia, by the commanding officer of that post, on the receipt by him of this order, and will report in person to the commanding officer at Fort Custer, Montana for duty at that post.

Heizmann, Charles L., Major and Surgeon, is granted leave of absence for twenty-one days, to take effect on or about April 14, 1894.

Kieffer, Charles F., First Lieutenant and Assistant Surgeon, having reported at Headquarters, Department of Dakota, is assigned to temporary duty at St. Paul, Minn., and will report to the Medical Director of the department for instructions.

Munson, Edward L., First Lieutenant and Assistant Surgeon, will proceed without delay to Camp Merritt, Montana, and report to the commanding officer for temporary duty at that post.

Snyder, Henry D., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Reno, Oklahoma Territory, and ordered to Fort Du Chesne, Utah, for duty at that post, relieving Robinson, Samuel Q., Captain and Assistant Surgeon. Captain Robinson, on being relieved by Lieutenant Snyder, will report in person to the commanding officer at Davids Island, New York, for duty at that post.

Society Meetings for the Coming Week:

Monday, *April 16th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society.

Tuesday, *April 17th:* Medical Society of the State of California (first day—San José); New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Kings and Westchester, N. Y.; Baltimore Academy of Medicine.

Wednesday, *April 18th:* Medical Association of Georgia (first day—Atlanta); Medical Society of the State of California (second day); New York Academy of Medicine (Section in Public Health and Hygiene); Harlem Medical Association of the City of New York; Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society; Windham, Conn., County Medical Society (annual—Plainfield); Middlesex, Mass., South District Medical Society (annual, Waltham).

Thursday, *April 19th:* Medical Association of the State of Alabama (first day—Birmingham); Medical Association of Georgia (second day); Medical Society of the State of California (third day); New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private); Tolland, Conn., County Medical Society (annual).

Friday, *April 20th:* Medical Association of Georgia (third day); Medical Association of the State of Alabama (second day); New York Academy of Medicine (Section in Orthopædic Surgery); Baltimore Clinical Society; Chicago Gynæcological Society.

Saturday, *April 21st:* Medical Association of the State of Alabama (third day); Clinical Society of the New York Post-graduate Medical School and Hospital.

Answers to Correspondents:

No. 424.—Male nurses not drawn from a training school are employed at the Roosevelt Hospital, and all the large general hospitals have men as orderlies. By making early application in person you might obtain a temporary appointment.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of February 15, 1894.

The President, Dr. D. B. St. John Roosa, in the Chair.

Scurvy in Children.—Dr. W. P. Northrup read a paper with this title. (To be published.)

Scorbutic Pseudo-paralysis.—Dr. Henry Ling Taylor read a paper on this subject. He said that this condition was a peculiar and prominent symptom of scurvy in children. The patient upon whose case the study was based had been brought to the author for some form of paralysis. The child, eleven months and a half old, had been fed exclusively upon a special brand of condensed milk. The first local symptom noticed had been weakness in sitting up, and then there had been absolute inability to hold the body erect. Tender swellings next appeared on the right thigh. The gums were spongy and one of the eyes was black. The patient had lost both appetite and flesh. At no time had the digestion failed or the bowels been out of order. The rectal temperature was 102·5° F. The skin was covered with a papular eruption. The breath was very fœtid. The patient made no attempt to move the legs. The knee reflexes were normal. Pressure elicited pain over the limbs and over the first and second lumbar vertebræ. The spine was rigid. There were no symptoms of rickets. Scorbutus was diagnosticated, and the patient was put upon the use of Pasteurized milk, orange juice, and beef juice. Improvement began at once. The only drug used was phosphate of sodium as a laxative. The cure was complete in a very short time. There was no doubt that condensed milk did considerable harm when employed exclusively as a diet for young children. The children of the rich were much more likely to have scorbutus than those of the lower classes, for the reason that in the lowly household the child was taken to the table and allowed to have whatever there was upon it, while in the wealthy family the baby was fed upon something prepared especially for it. When a child failed to sit up at a proper time, or when it had been sitting and then could not do so, an investigation should be made with scorbutus in mind.

It must be remembered that pseudo-paralyses were among the most striking symptoms of this disease and should be looked carefully into. The author thought from the pathological findings in Dr. Northrup's case that a toxicity of the blood might be assumed. It was also thought that some of the obscure cases of bowing of the spine might be scorbutic, and that it would be well to bear this in mind when examining for rhachitic paralyses.

Dr. Floyd M. Crandall read letters on the subject from Dr. Louis Starr, of Philadelphia, Dr. Rotch, of Boston, and Dr. Forchheimer, of Cincinnati.

Dr. Starr had seen thirteen cases of scurvy in children. In the main, the symptoms were like those described, with the exception that the mouth condition was not present unless there were teeth to produce irritation.

Dr. Rotch had had twenty cases, and he was sure that many more had come under his notice in which a diagnosis had not been made. He thought that scurvy could be classed under the same head as the other hæmorrhagic diseases.

Dr. Forchheimer had seen seven typical cases. He thought that the condition of scurvy was brought about by some chemical change in the blood at present unknown.

Dr. J. Lewis Smith thought that many mistakes had been made in diagnosticating scorbutus as rickets. It was a fact that scurvy of the mouth did not occur where the teeth were absent, as in old people where the teeth had fallen out or in young infants before the eruption of teeth. It was thought possible that there might be an association between rickets and scorbutus; in rickets the teeth were slow to appear, and this might account for the absence of the mouth symptom. Scorbutus was a disease of malnutrition, and was frequently found in children that had been fed exclusively upon milk for the first year of life.

Dr. A. Jacobi thought that the disease was more prevalent at certain times than at others, as when infectious diseases were rife. More cases had occurred in the first half of March, 1892, when the weather was particularly moist and disagreeable, than at any other time. The disease was not confined to the poorer classes, and was found most frequently where children were fed exclusively upon sterilized milk. This sterilization of milk at the expense of its chemical composition, rendering it innutritious, had been the cause of many deaths. The speaker thought that the symptoms of spongy gums could not be relied upon alone to mark scurvy, for if the teeth were absent the symptom would not appear. Some thought that the term scurvy ought to cover the ground for this condition, but might it not be only a symptom of a morbid state of the blood-vessels? Ulcerative stomatitis or gingivitis ought not to be mistaken for scorbutus. In the treatment of scurvy a mixed diet was relied upon—fruit, beef juice, milk, cereals, and phosphorus. The speaker related a case in which he thought an exhausting diarrhœa had caused, or been the exciting cause of, scurvy.

Dr. L. Emmett Holt said that there was no doubt that scurvy was a dietetic disease. The greater number of cases that had come under his notice had been caused by an exclusive diet of Mellin's food. Cases of scurvy were rare in institutions for children, where sterilized milk was usually used, but not to the exclusion of everything else.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Eighty-eighth Annual Meeting, held in Albany, on Tuesday, Wednesday, and Thursday, February 6, 7, and 8, 1894.

The President, Dr. Herman Bendell, of Albany, in the Chair.

(*Concluded from page 346.*)

The Inch-and-a-Half Incision and Week-and-a-Half Confinement in Appendicitis.—Dr. Robert T. Morris read a paper with this title, and stated that we had recently learned four principal things relative to appendicitis, and he now asked the members of the profession to accept a fifth point: First. We had learned that appendicitis was of such common occurrence that every general practitioner had many cases in his *clientèle.* Second. It was now generally known that multitudinous forms of abdominal inflammation were symptomatic of appendicitis. Third. Statistics showed that a late operation did not give much encouragement. Fourth. It was known that an early operation or an operation in the interval between attacks was attended with trifling mortality (with none at all in his experience), but that there was danger of ventral hernia resulting from the operation if a long incision was made.

The fifth point was this: We did not need to make a long incision in appendicitis cases that were operated upon at the outset of the inflammation, or in interval cases, as a rule; and there would be no hernias and no permanent scars if the surgeon would accept as standard the author's abdominal incision, which was an inch and a half in length, the divided structures of the abdominal wall being united separately with fine catgut afterward. The author buried the stump of the appendix with Lembert sutures. The abdominal scar disappeared entirely, so that at the end of a few months it could not be seen. His death rate had been nothing at all in cases without pus, and physicians upon whom he depended for cases were now ashamed to have him find pus in the cases to which they called him. He did not know just where to look for danger in any of the cases operated upon at the time of his choice, but called the attention of members of the society to one danger in the use of carbonate of sodium for reversing peristalsis of the bowel. A note was at present going the rounds of the press to the effect that carbonate of sodium was useful in reversing peristalsis, but the author, in experimenting with rabbits, had accidentally discovered that carbonate of sodium on touching the ileum regularly produced intussusception in less than forty-five seconds. The mechanism of the intussusception consisted in spasm of a belt of circular muscular fibers of the ileum, and this portion was then quickly invaginated by the peristaltic action of the longitudinal muscular fibers. The author now used chloride of sodium for reversing peristalsis in all of his operations.

He stated that there was strong opposition to his plan of removing an infected appendix just as soon as it was discovered, but this opposition must fade away as soon as physicians generally could benefit from his experience, which was to the effect that appendicitis was an infectious exudative inflammation which did not disappear on the disappearance of the symptoms. He had removed a large number of appendices from patients who felt perfectly well but who could not obtain life insurance, or who feared recurrence, having had a previous attack of appendicitis. In all these cases he had found destructive processes in progress. Sometimes there was slowly progressing necrosis of the lymphoid tissue of the appendix; sometimes he had found tuberculosis or carcinoma insidiously beginning at the seat of the old inflammation; sometimes adventitious bands set snares for the bowel; and he had discovered that proliferating endarteritis, which must eventually lead to gangrene of the appendix, was common in very mild chronic cases. He had found proliferating endarteritis producing slow occlusion of the arteries of the appendix in three mild chronic cases in succession.

Surgeons were laughed at occasionally because they found normal appendices at an operation for supposed appendicitis, but he did not believe that proper examination had been made of the specimens. He had removed two or three appendices which were apparently perfectly normal, but the patients' symptoms had all stopped after the operation, and when cultures of bacteria and microscopic sections had been made from these specimens, it was found that they had been dangerously infected. The mucosa and adenoid tissue were undergoing destruction by the colon bacillus.

When his inch-and-a-half abdominal incision was employed in the removal of infected appendices, patients left the hospital at the end of a week and a half. If an incision two inches long was made, the patient would not be ready to leave until fourteen days after the operation, and if the incision was from two and a half to four inches long, eighteen days would be required for repair. Consequently he had adopted as a standard the inch-and-a-half incision and week-and-a-half confinement plan, which left no hernia and an evanescent scar.

By operating immediately in acute cases, he did not mean on the following day, but on the following hour. Physicians who did not accept this plan must lose a few patients that they did not expect to lose, and they must let very many patients suffer tediously and unnecessarily; but there would not be much further opposition, because physicians were only too glad to do the very best thing as soon as they had learned what it was. The insurance companies would not insure a patient who had ever had appendicitis and whose appendix still remained, if they were to note the character of the adventitious peritoneal bands which formed in these cases, and if they observed the persistence of appendicitis and of supplementary diseases in the appendices of patients who were thought to be quite well.

Appendicitis: The Connection between its Symptomatology and the Gross Anatomy of the Appendix.—Dr. Joseph D. Bryant, of New York, based his paper upon extensive pathological investigations. He had found that the fibrous tissue involved in the appendix was rarely the primary seat of the disease—only three times in a hundred and twenty six cases, The pain of the disease depended much upon its surroundings. the connective tissue involvement showing a different pain from the peritoneal. The pain was also modified by the size, situation, and mobility of the appendix. In forty per cent. of sixty-six cases seen by the speaker, the appendix had been freely movable, with a mesentery of varying dimensions. Sudden severe pain in the region of the organ was usually the first prominent symptom of the disease. The direction of the appendix was a matter of little importance, except in cases in which it was far from its usual location, especially if it dipped into the pelvis. The average length was three inches and a quarter for women, and three inches and a half for men. The pain was either direct or reflex, and might be referred to the seat of any of the spinal nerves implicated in the inflammatory process. The reflex pain was due to the influence of the abdominal sympathetic ganglia in the process. Tenderness on pressure, as a symptom, might be local or general, severe or mild, and varied with the location of the appendix, a dull tenderness indicating that the organ was located behind the colon, an acute tenderness that it was within the area of the peritonæum. A diffused general tenderness had little practical bearing upon the location of the appendix. Tension was another sign of importance, and might be limited to the area supplied by the nerve of the region of tension. Other points of importance in making a diagnosis were the presence of a tumor and its size, firmness, mobility, etc. A tumor was usually discoverable from the first to the eighth day of the attack, and most frequently on the third, fifth, or sixth. The conclusions which the author drew from his investigations were: 1. The location, size, and direction of the appendix have an important bearing upon the inflammation which it suffers. 2. The varying locations of the appendix and cæcum cause definite statements as to their location and position to be misleading.

Dr. H. Mynter, of Buffalo, appreciated the importance of the anatomical points which had been elucidated by Dr. Bryant. The relations of the appendix to its mesentery were especially significant. If the mesentery was of considerable dimensions, an inflammatory process would result in a local perityphlitic abscess. If the appendix was quite free in the peritoneal cavity, without any considerable mesentery, the inflammatory process would be severe in character, probably perforative. He presented specimens from two such cases, both of them fatal after operation. A wrong impression was derived from the glowing statistics of certain surgeons who did not appear to have any fatal cases, or at least did not report them. In his experience the severer forms of appendicitis were followed almost invariably by death, when operated upon, and if the New York surgeons were able to cure them he would be very glad to learn how they did it.

Dr. H. Durand, of Syracuse, narrated a case which was not seen by him until perforation had taken place. The patient, a young man, was in a very bad condition, and was operated upon at night among very bad surroundings. Notwithstanding the unpromising outlook, recovery was prompt and almost uneventful, showing that even desperate cases were not always hopeless.

Dr. Willy Meyer, of New York, knew of no New York surgeon who could boast of a clean record in operations for perforative appendicitis. Surgeons and physicians in that city certainly had enjoyed exceptional advantages in the study of this disease, owing to the abundance of material and the readiness and facility with which the physician could secure the aid of the surgeon when an operation was required. This had been very helpful in educating both the physician and the surgeon, and such advantages were necessarily wanting in a great degree in small cities and the country, where the means of communication were less satisfactory than in the metropolis. It was scarcely necessary to say that if a case was not seen until perforation had taken place the successful issue of an operation was hardly to be expected.

Dr. Robert T. Morris, of New York, did not entirely approve of the method of palpating the appendix which had been advocated, as the necessary manipulation might precipitate an acute attack of appendicitis. Dr. Bryant's statistics in regard to the length of the appendix were based mainly upon examinations made after death, and it must be remembered that the conditions at that time differed from those which existed before death. Peroxide of hydrogen had been recommended by one of the speakers for application to the peritonæum in cases of general peritonitis. Warm saline solutions were preferable when that condition existed, while the peroxide was to be used as an application to suppurating surfaces. Drainage by means of wicking should be employed in suppurative appendicitis. The results obtained by New York surgeons were better than those obtained by surgeons in other cities, because they saw their patients earlier in the history of the disease.

Dr. Mynter wished to know whether successful results had been obtained by the last speaker after operations in cases in which gangrene and suppuration had been present.

Dr. Morris replied that in the severer cases death would undoubtedly follow operation, but he had operated in several cases of even desperate character in which recovery had taken place.

Dr. Edebohls stated that the conditions in chronic appendicitis were precisely the ones in which he had been able to palpate the appendix successfully. He had operated in a number of cases in which he had been able to verify the diagnosis made prior to operation. Instead of irrigating the abdominal cavity, he preferred to wipe away all offending material with dry, soft cloths. As to the cases in which perforation was present, one was sometimes disappointed by recovery, while in simple cases in which the conditions seemed favorable for recovery the patients died.

Dr. A. Vanderveer, of Albany, quite agreed to the statement that the conditions for operating with rural surgeons were often less favorable than with those who lived in the large cities, and many hours might be consumed before the rural surgeon could reach his case. In acute perforative appendicitis a fatal result was frequently inevitable, even though one operated immediately after the accident occurred.

Dr. Bryant was impressed with the fact that no condition in the entire field of surgery called for more careful judgment than perforative appendicitis with suppuration. In his experience it was the rule that all such cases would terminate fatally.

Intestinal Perforation in Strangulated Hernia.—Dr. W. B. De Garmo, of New York, speaking on this subject stated that it was not unusual in opening the hernial sac to find congestion, gangrene, and perforation of the intestine. The first question, after releasing the strictured bowel, was whether it should be returned or removed. The free use of hot water upon the injured organ would enable one to decide that it could with safety be returned. Shock would be diminished by the influence of the hot water and clots and ecchymoses upon the bowel would be removed. The intestine should be drawn out and carefully inspected until healthy structures were reached, all adhesions being separated. It was inadvisable to tap the distended bowel even with a fine hypodermic needle. Lacerations and perforations of the gut might be due to taxis or force in separating adhesions. In either condition extravasation of the intestinal contents was to be expected, and was, of course, a source of danger. If the intestinal wounds were carefully sutured, the sutures might be passed with the fæces without injury. The treatment of the seriously injured bowel would consist in resection, the making of an artificial anus, or fæcal fistula. The last of these was preferred by some surgeons, and was less objectionable than an artificial anus. If resection was required, the end-to-end suture was preferable to lateral anastomosis. Murphy's button was available for this operation, also the method which had been recommended by Maunsell.

Recent Methods of Gastrostomy for Stricture of the Œsophagus.—Dr. Willy Meyer, of New York, remarked that this condition had formerly been one of the most troublesome which the surgeon was called upon to treat, as the patient was not generally seen until very late in the history of the disease. Recent methods and treatment offered great improvement over those formerly used. It was now unnecessary that a patient should die of starvation. The operation of Fenger was the one which had formerly been employed, but it was unsatisfactory on account of leakage at the side of the wound, and was now practically abandoned.

Von Hacker's operation was an improvement upon Fenger's. The incision was made along the outer border of the left rectus muscle, the stomach was drawn forward and attached to the wound, and after two days the stomach was incised.

Hahn's incision was similar to that used by Fenger, but in addition there was a transverse incision which prevented the danger from leakage.

In Witzel's operation, after the stomach had been incised a tube was introduced into the œsophagus, covered with a fold of the stomach, and the fold secured by sutures. The speaker had had several successful operations by this method.

In the Szabanijew-Frank operation an oblique incision was made over the stomach, the latter brought forward, secured, and incised, and an œsophageal tube secured in the wound. In general, success by any method would be much better if the operation was performed early, before the patient suffered with inanition.

Some Cases of Brain Surgery.—Dr. H. Mynter, of Buffalo, narrated several cases in which operations upon the brain had been performed by him with greater or less loss of brain substance. Only sterilized water should be used for irrigating wounds of this character.

The Action of Scopolamine on the Eye.—Dr. Thomas R. Pooley, of New York, called attention to this new mydriatic, isomeric with cocaine, possessing all the good effects of atropine without any of its bad ones. It was said to retard the action of atropine when both were used. It had been asserted that it could be used for a long time in a solution equivalent to a one-per cent. solution of atropine without disturbing the stomach, but the speaker was doubtful of the correctness of this statement. In iritis and scleritis it was useful in cases in which atropine was not tolerated, also in glaucoma, and it did not increase the intra-ocular pressure. The salt used was the hydrochloride, and a solution of one fifth of one per cent. was five times as efficient as a solution of atropine of equal strength. In determining the anomalies of refraction it would cause complete paralysis of accommodation in from ten to fifteen minutes, and the mydriasis would continue from twenty-four to forty-eight hours. There were defects in visual acuteness after recovery from its immediate effect. A toxic effect had been reported in three cases. In the treatment of ulcer of the cornea it had given good results. The present indications were that it was a valuable addition to the available list of mydriatics.

Urethral Caruncle.—Dr. E. N. Liell, of New York, included under this term the vascular growths about the meatus urethræ of soft and spongy texture in women. They were irregular in outline, were of granular appearance, and varied in dimensions from those of a pin's head to those of a small marble. They were composed principally of very vascular hypertrophied papillæ, with abundant nerve supply, and were generally sessile. A single one might be present, or there might be quite a group of them. They were to be found not only along the borders of the meatus, but upon the wall of the urethra itself, and especially in middle-aged married women. Their ætiology was obscure, but they were usually associated with some other morbid conditions of the genitals. They seemed to cause frequency of micturition, and were the source of severe pain and tenesmus. They were prone to return after removal, especially if the removal had been incomplete; hence their removal by dissection was preferable to that by torsion. The operation wound should be systematically treated with a strong solution of nitrate of silver until their eradication was assured.

Uræmic Hemiplegia.—Dr. R. W. Wilcox, of New York, stated that this condition was probably due to œdema of the brain with serous effusion. The symptoms were vertigo, gastric and cardiac disturbance, œdema of the face, etc. The urine was usually albuminous before hemiplegia occurred. If hyaline casts were found in the urine, the condition of contracted kidney was probably present; there might be albuminuric retinitis. Lancereaux had shown that the œdema of the brain might be transferred from one side to the other, with a corresponding change in the hemiplegia. The superficial reflexes were impaired, and the temperature was elevated. Hæmorrhage and softening of the brain might result. The tendon reflexes were sometimes normal and sometimes exaggerated. The hemiplegia usually disappeared after a time, but it might recur. The prognosis was grave if the renal involvement was considerable. The treatment consisted in venesection and the use of drastic purgatives, diuretics, and heart stimulants.

Dr. E. D. Fisher, of New York, thought it was very difficult to distinguish uræmic hemiplegia from syphilitic disease of the cerebral blood-vessels. In some cases an autopsy had shown that the serous effusion referred to was the real cause of the trouble. It was doubtful whether uræmia *per se* was ever the cause of hemiplegia.

Dr. W. W. Seymour, of Troy, thought the importance of determining the volume of urea in cases of this character was very great. The fluctuations of this constituent of the urine were considerable. The determination of the urea was in many cases of greater significance than the determination of the volume of albumin.

The Barber's Shop as a Source of Contagion.—Dr. George T. Jackson, of New York, called attention to the great importance of this subject as a matter of personal hygiene. There was great difficulty in disinfecting some of the instruments used by barbers, especially the hair-clipper. Ringworm of the scalp, syphilis, alopecia areata, and numerous other annoying diseases were in many instances directly traceable to the barber's shop. The finger-nails of the barber, the towels used, and the head-rest of the chair were also sources of infection. In France and Germany stringent rules had been adopted to prevent the spreading of disease by such means. This paper was presented in the hope of arousing professional opinion to the importance of the subject.

Dr. F. C. CURTIS, of Albany, called attention to the fact that it was not a very long time since the barber had been one of our fraternity. We criticised the practice of the midwife, and said it was important than the barber should receive similar attention. Probably the milder varieties of disease mentioned were communicated much more frequently than the severer ones. It was time that public attention was called to the importance of the subject.

Dr. MCCRACKEN, of West Troy, had been able to trace one hundred and twenty-six cases of ringworm of the scalp, in a public institution under his care, to the use of a single hair-clipper. The disease had ceased to appear after the objectionable instrument was disposed of. Thus, the statement of the reader of the paper was abundantly verified.

The Treatment of Glycosuria.—Dr. W. B. VANDERPOEL, of New York, read a paper upon this subject. The climate, he said, should be suited to the patient's condition, also his clothes, exercise, and diet. Early in the disease, sugar, starch, and the carbohydrates in general should be avoided, while at a later stage a mixed diet was preferable. If fats were given early in the disease, emaciation would be avoided; in the later stages they should be withheld. It was difficult to find a good substitute for wheat bread. Pavy's flour furnished the best substitute at present. The medicinal treatment might include the use of opium, bromides, lithium, arsenic, the coal-tar derivatives, ergot, Carlsbad and Vichy salts, iodoform, and lactic acid. Jambul and pilocarpine were useful if not given in too large doses. Oxygen should be given freely. In some cases transfusion of blood was indicated. The animal extracts had been found efficient. Diabetic coma was sometimes avoided by a judicious combination of carbohydrates with albuminoids. Life might be prolonged and the patient made comfortable if the disease was not cured, by careful study of all the conditions.

Hæmorrhage after Cœliotomy; its Place in Statistics.—Dr. A. H. BUCKMASTER, of New York, read a paper with this title. He said that the occurrence of hæmorrhage after cœliotomy was frequent. Operators but rarely reported their cases, and many patients who had died on account of hæmorrhage were classed under the head of deaths from peritonitis. The author explained this in the following manner: In many of these cases only an incomplete autopsy was made and no blood was found in the pelvic cavity. An incipient peritonitis was found, and this was given as a satisfactory cause of death. In these cases hæmorrhage had been feared and the foot of the bed elevated so that the blood gravitated under the diaphragm. Attention was called to the danger of allowing such statistics as were commonly published to be accepted by the courts as what might be expected of the well-educated pelvic surgeon.

In addition to the well-known causes of hæmorrhage, the speaker dwelt on a cause to which he had first called the attention of the profession. Since then Dr. Polk and Dr. Coe had confirmed his observations. The cause alluded to occurred in the use of the Trendelenburg posture. After the hips had been elevated for some time, the blood pressure in the pelvis was much diminished. When the hips were lowered, the pressure was greatly increased and vessels would bleed readily which before had shown no evidence of loss of blood.

The writer narrated a case of hæmorrhage after laparotomy, and presented a carefully prepared pulse, temperature, and respiration chart.

With so many uncontrollable causes of hæmorrhage outside of the pelvis, where they could be noted immediately, it was not surprising that so many cases of hæmorrhage existed in the pelvis, where the only signs were those revealed by the pulse and the drainage-tube, when this latter means was available.

Book Notices.

An American Text-book of the Diseases of Children. Including special chapters on Essential Surgical Subjects; Diseases of the Eye, Ear, Nose, and Throat; Diseases of the Skin; and on the Diet, Hygiene, and General Management of Children. By American Teachers. Edited by LOUIS STARR, M. D., Physician to the Children's Hospital, etc., Philadelphia. Assisted by THOMPSON S. WESTCOTT, M. D., Attending Physician to the Dispensary for Diseases of Children, Hospital of the University of Pennsylvania. Philadelphia: W. B. Saunders, 1894. Pp. xiv–1190. [Price, $7.]

THIS book is the joint product of sixty-three contributors, and embraces many well-known names. The purpose has been, the editor states in the preface, "to present to the profession a working text-book which shall be closely limited to, while completely covering, the field of pædiatrics." From a careful examination of the book it would appear that he has fallen short of his ideal. A good deal of matter has been introduced which pertains more to general medicine and surgery than to pædiatrics, and many subjects belonging exclusively to early life have been passed over with very brief notice, and some of them omitted altogether. Thus we find an article of twenty pages upon Asiatic cholera, an excellent one, but to our mind out of place in such a text-book; again, fifteen pages are given to the subject of vesical calculus; and twenty-two pages to tracheotomy. We find, on the other hand, the whole subject of pneumonias of all varieties occupying but fifteen pages, chronic hydrocephalus dismissed in one page, and tubercular meningitis filling four pages and a half. The subject of stomach-washing is barely alluded to, and then merely in a casual manner. Pseudo-diphtheria is given no place whatever. These examples will suffice to illustrate the point that the space of the book has not been well divided among the different contributors.

The first thirty-six pages are given to the clinical investigation of disease and the general management of children, and are by the senior editor. This is essentially a reprint from the author's book upon *The Diseases of the Digestive Organs*, with some minor omissions. In this we find the following surprising statements: "At birth the length [of the child] is about sixteen inches. . . . The growth is quickest during the first week of life. . . . In the first year there is an increase of from five to six inches and a half." These statements are at variance with those of every writer known to us. Twenty inches is universally recognized as the average length of a full-term child both in Europe and in America. It is equally true that the majority of infants do not grow during the first week, and, further, that the average gain in length during the first year is from six to nine inches.

The general directions given for the examination of sick children are excellent. The statements on the subject of infant feeding are temperate and sensible, and will appeal to most readers as exceedingly good. The space given to feeding in the second and third years is too small; this important subject should have been given a full discussion.

The second chapter, upon the chemistry of milk and artificial foods, by Albert Leeds, Ph. D., is an innovation and an exceedingly good one. Too little knowledge exists upon this subject.

The third chapter, upon exercise and massage, is a curiosity. We wonder how the editor could have admitted such an article to his book. In it we are told that "the homunculus (!), when fully able to cruise about the room or garden, should do so, clambering up and tumbling down. So shall there come growing consciousness of capacities and limitations, so learn to save the imperilled head by use of hands, and gleefully secure and inspect coveted objects."

The diseases incident to the newly born are treated by Dr. E. P. Davis, of Philadelphia. These have been given altogether too little space. In the chapter on birth palsies, Erb's paralysis is not even mentioned.

The best group of articles in the book are those upon the general diseases. The subject of tuberculosis is treated by Osler in his usual thorough, incisive, and exact manner. The chapters on hereditary syphilis, by Chapin, typhoid fever and influenza, by Earle, and diphtheria, by Dillon Brown, are all excellent.

The writer upon scarlet fever states positively that this is a microbic disease, a question which we believe has not yet been settled. Too much stress appears to be laid upon the observations of Edington, whose work has not been confirmed by subsequent investigations. Very few evidences of original observation are seen in this article. The temperature charts are copied from Ashby, and most of the treatment is quoted from J. Lewis Smith.

In the article on diphtheria strong emphasis is very properly laid upon the local treatment, and very little stress is put on the subject of internal medication—a point in which we can agree with the writer. The author excludes from the term "diphtheria" the cases in which the Loeffler bacilli are absent, although no special discussion of pseudo-diphtheria is given. There is no adequate description of diphtheritic paralysis.

Most of the blood diseases are exceedingly well treated. The sections on diseases of the digestive organs are disappointing. The dyspepsia described is that of older children, but not of infancy. The classification adopted for the diarrhœal diseases is "Acute and Chronic Intestinal Indigestion," "Acute, Subacute, and Chronic Milk Infection." This classification seems to us of rather doubtful propriety.

In the section on diseases of the nervous system, the articles by Peterson upon abscess, tumors of the brain, and cerebral palsies, are all excellent. Too much space, we think, has been given to rare nervous affections—*e. g.*, eight pages to tumors of the spinal cord; six pages to Raynaud's disease; and six pages to acromegaly, more than that devoted to tubercular meningitis.

Under the head of pulmonary diseases, the articles by Pepper on pneumonia are disappointing; that on pleurisy, by Koplik, is full and accurate and an excellent presentation of the subject. Crandall's article upon the heart is worthy of special mention.

Many articles in the book give evidence of comparatively little original observation or research. The colored plates, almost without exception, are poorly executed, and several are so bad as to be positive caricatures—*e. g.*, that of the hæmorrhages in the newly born, on page 74, and the plate on tinea favosa, on page 1092. The reproductions from photographs are most of them excellent—*e. g.*, those showing the operation of intubation, the plates of the various micro-organisms, that of psoriasis, and that of syphilitic teeth.

The printer's work has been well done: the book is remarkably free from typographical errors, and, best of all, it is furnished with a good index.

While the book has many points of excellence, it can not be said by an impartial critic to be, as the preface states, "thoroughly abreast with the rapid advance which is constantly made in this branch of our profession."

Treatment of the Diseases of the Stomach and Intestines. By Dr. Albert Mathieu, Physician to the Paris Hospitals. New York: William Wood & Co., 1894. Pp. viii–294.

As the author truly states, the increase in our knowledge of the chemistry of gastric digestion, as well as the advances made in our knowledge of self-intoxication of intestinal origin, has materially changed the views entertained by the profession in regard to the pathology of gastro-intestinal diseases. He has accordingly endeavored to show clearly in what measure these new ideas have modified the indications for treatment, and, by setting forth the objects that the therapeutist has to attain, he indicates the means at his disposal to insure their accomplishment. He holds that the study of the affections of these two portions of the digestive apparatus can not be separated, because the pyloric and ileo-cæcal valves are anatomical boundaries, rather than barriers in the domain of normal and morbid physiology.

The consideration of the subject is divided into three parts. In the first the technique of diagnosis is explained. More stress, it seems, should have been laid on the symptom of indicanuria indicating the degree of intestinal indigestion; but as a rule the methods of examining the contents of the stomach, bladder, and intestine, and the clinical significance of the results of the examinations, are satisfactorily described.

The second part consists of general considerations on diet. Mathieu calls attention to the uselessness of administering peptones, because their composition is too complex and variable, while it has never been shown that artificially prepared peptones are susceptible of absorption and assimilation. Extracts of meat he also considers as without alimentary value. Milk is the most desirable food in most gastropathies, and the author confirms the favorable reports regarding the value of meat powder. Alcohol, in the form of rum or brandy, may be given but red wine, on account of its acidity, should be interdicted. Hot drinks should be substituted for cold fluids.

The third part of the volume is devoted to the treatment of the principal forms of dyspepsia and of the most common symptoms of gastro-intestinal diseases; in this category are included hyperchlorhydria, nervo-motor dyspepsia, gastrectasia, gastralgia, vomiting, disorders of appetite, constipation, diarrhœa, gastric and intestinal hæmorrhage, and acute indigestion.

The fourth part treats of the diseases of the stomach and intestine. The therapeutic indications are well considered, and the suggestions in the volume are likely to prove useful to all physicians.

Transactions of the Royal Academy of Medicine in Ireland.—Vol. XI. Edited by William Thomson, M. A., F. R. C. S., General Secretary; Surgeon to the Richmond Hospital, Dublin. Dublin: Fannin & Co., 1893. Pp. xxxix–518.

This volume contains the papers read before the various sections of the academy during the session of 1892–'93, as well as a list of the members, the rules, and the reports.

The professional papers have been carefully prepared, and treat of interesting conditions. Dr. J. O'Carroll, in a paper on Saturnine Encephalopathy, suggests that there is a direct influence of lead on the smaller cerebral vessels and the neuroglia surrounding them. Mr. J. B. Story reports five cases of glaucoma in persons between the ages of thirteen and thirty-five. Mr. J. B. Coleman and Dr. J. O'Carroll report a case of myelosyringosis. Dr. John Knott has a note on the necessity of diet in cases of pin-swallowing. Dr. J. Knox Denham urges the erection of special hospitals for the treatment of pulmonary consumption. Dr. J. Knott describes four cases of subjective ozæna in males. Dr. W. Beatty reports a case of myxœdema successfully treated by injections of extract of sheep's thyreoid. Mr. J. Burgess gives the history of a fatal case of septicæmia following the extraction of a molar tooth. Dr. W. R. Dawson, in a paper on The Diagnostic Value of the Diazo-reaction, concludes that it does not afford positive proof of the existence of typhoid fever. Sir William Stokes commends the advantages of Esthlander's operation in a paper on that subject. Mr. Thornley Stoker, in a paper on The Operative Treatment of Trifacial Neuralgia, advises neurectomy of the fifth nerve as the best surgical procedure. Dr. C. B. Ball reports twelve cases of laparo-colotomy for rectal cancer. Dr. Kendal Franks furnishes an interesting paper on movable kidney. Lack of space forbids an enumeration of all the papers in this volume, that well maintains the excellent standard of its predecessors.

Venereal Memoranda. A Manual for the Student and Practitioner. By P. A. MORROW, A. M., M. D., Clinical Professor of Venereal Diseases in the University of the City of New York, etc. New York: William Wood & Co., 1894. Pp. iv–332.

IN this, the second, edition of his little manual, the author has taken the opportunity to include the latest advances made in our knowledge of venereal diseases during the eight years that have elapsed since the work first appeared.

In the additions that have been made in reference to the microbian theories of the ætiology of venereal diseases and to recent therapeusis the author has not lost sight of that brevity associated with accuracy that characterized the former edition.

We believe that the book is very useful.

BOOKS, ETC., RECEIVED.

A Practical Treatise on the Diseases of the Hair and Scalp. By George Thomas Jackson, M. D., Professor of Dermatology, Woman's Medical College, New York Infirmary, etc. New, Revised, and Enlarged Edition. New York: E. B. Treat, 1894. Pp. 21 to 414. [Price, $2.75.]

Aero-therapeutics, or the Treatment of Lung Diseases by Climate, being the Lumleian Lectures for 1893, delivered before the Royal College of Physicians, with an Address on the High Altitudes of Colorado. By Charles Theodore Williams, M. A., M. D. Oxon, F. R. C. P., Senior Physician to the Hospital for Consumption and Diseases of the Chest, Brompton, etc. London and New York: Macmillan & Co., 1894. Pp. xii–187. [Price, $2.]

Methods of Pathological Histology. By C. von Kahlden, Assistant Professor of Pathology in the University of Freiburg. Translated and edited by H. Morley Fletcher, M. A., M. D. Cantab., M. R. C. P., Casualty Physician to St. Bartholomew's Hospital, etc. With an Introduction by G. Sims Woodhead, M. D., Director of the Laboratories of the Conjoint Board of the Royal Colleges of Physicians (Lond.) and Surgeons (Eng.). London and New York: Macmillan & Co., 1894. Pp. xi–171. [Price, $1.40.]

The Human Element in Sex. Being a Medical Inquiry into the Relation of Sexual Physiology to Christian Morality. By Dr. Elizabeth Blackwell. New Edition. London: J. & A. Churchill, 1894. Pp. 76. [Price, 2*s*. 6*d*.]

The Johns Hopkins Hospital Reports. Report on Typhoid Fever. Vol. LV. No. 1. 1894.

Notes on Naval Hospitals, Medical Schools, and Training School for Nurses, with a Sketch of Hospital History. By J. D. Gatewood, M. D., Passed Assistant Surgeon, United States Navy.

The Transactions of the Third Annual Meeting of the Association of Military Surgeons of the National Guard of the United States. Held at Rush Medical College on August 8th, and at the United States Government Building, Jackson Park, Chicago, August 9 and 10, 1893.

Memorial by the Managers of the New York State Reformatory at Elmira, relating to the recent Investigation by the State Board of Charities, 1894.

The Difference between Certain Wounds inflicted by the Projectiles of Large and Small Caliber Hand Weapons. By Captain Louis La Garde. [Reprinted from the *International Medical Magazine.*]

A Bacteriological Study of Four Hundred Cases of Inflammation of the Throat, occurring in Diphtheria and Scarlet Fever, with Especial Reference to Pathogenesis. By John Lovett Morse, M. D. [Reprinted from the *Medical and Surgical Reports of Boston City Hospital.*]

A Few Things that may Add to the Convenience of Railroad Surgeons, with an Article on the Bloodless Amputation at the Hip Joint at One Sitting and with One Needle. By Stewart Leroy McCurdy, M. D., Dennison, Ohio. [Reprinted from the *Railway Age and Northwestern Railroader.*]

The Treatment and Cure of Chancre with Peroxide of Hydrogen. By Willard Parker Worster, M. D. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases.*]

Laparo-hysterotomy: its Indications and Technique. By N. Senn, M. D., Chicago. [Reprinted from the *American Journal of the Medical Sciences.*]

Tuberculosis in Relation to Animal Industry and Public Health. By James Law, 1894. [Bulletin 65.]

Miscellany.

The Proteids of the Thyreoid Gland.—In the March number of the *Journal of Physiology* there is an article by Dr. Frederick Gourlay in which he gives an account of his experiments in the form of answers to questions, largely as follows:

"*Does the thyreoid contain peptone?* As clinical experience has shown that thyreoid feeding in cases of myxœdema is as efficacious as injection of thyreoid juice subcutaneously, it is evident that the active principle is not destroyed by the process of digestion; therefore it was not *a priori* improbable that a peptone or proteose would possibly be obtainable from the fresh thyreoid. But no peptone is present in the fresh thyreoid."

"*Does the thyreoid contain proteoses?* The answer to this question is also a negative one. The method adopted was Devoto's."

"*Does the thyreoid secrete mucin?* Mucin is a glucoside, a compound of a proteid and a carbohydrate (animal gum), and by boiling with dilute sulphuric acid it yields a reducing sugar. Nucleo-albumin, which is apt to be mistaken for mucin, does not do this. Two lobes of the thyreoid of an ox were scraped down, the capsule and trabeculæ of connective tissue being removed as much as possible. The pulp was then boiled with dilute sulphuric acid in a flask for two hours and a half and filtered. The filtrate was neutralized with alkali, and boiled with Fehling's solution. No reduction occurred. In another experiment similarly performed, the final filtrate was neutralized, boiled with crystals of sodium sulphate, and filtered to remove proteid matter. The filtrate, on being tested with Fehling's solution, gave no reduction even after long boiling. The colloid material in the alveoli of the organ is therefore not mucin.

"*Is nucleo-albumin obtainable from the thyreoid?* Two methods of preparing this substance were adopted.

"(1) *Wooldridge's method.* The finely divided organ was extracted for about twenty-four hours with a large quantity of distilled water. The extract was poured off, and to it weak acetic acid was added. After twenty-four hours a flocculent precipitate separated out and fell to the bottom of the vessel. This was washed by decantation, and finally collected on a filter. It was subjected to gastric digestion, and after some days a residue was left which was soluble in dilute alkali and reprecipitated on adding acetic acid. It was, moreover, rich in phosphorus. In other words, the residue consisted of nuclein. By Wooldridge's method, therefore, nucleo-albumin is obtainable from the thyreoid. The yield, however, by this method is not large, and sometimes the liquid became cloudy on adding the acetic acid, little or no precipitate falling subsequently. If, as I believe and hope to show, the nucleo-albumin is in part derived from the colloid matter of the gland, this fact agrees well with what is stated in the text-books to characterize the colloid matter and distinguish it from mucin—namely, the fact that it is not readily precipitable by acetic acid.

"(2) *Halliburton's method.* Some thyreoids were cut up very small and ground in a mortar with about an equal quantity of sodium chloride. A small quantity of distilled water was added and the whole thoroughly mixed. The resulting mass was exceedingly viscid. This was then poured into a large volume of distilled water. The pieces of tissue fell to the bottom of the vessel, and a large precipitate of whitish flakes took place all through the water. These formed cohesive strings which floated up to the surface of the water, where they formed a thick scum. On subjecting this to gastric digestion, the residue was again found to consist of nuclein.

"Nucleo-albumin can, therefore, be obtained from the thyreoid by both the methods adopted, but more readily by Halliburton's sodium-chloride method than by Wooldridge's acetic-acid method.

"*Does the thyreoid nucleo-albumin cause intravascular coagulation?* Wooldridge, Halliburton, Pekelharing, and others have abundantly demonstrated that nucleo-albumins obtained from various cellular organs produce intravascular thrombosis when injected into the circulation. It therefore became necessary to test this question with the nucleo-albumin of the thyreoid. The experiments were performed on rabbits. . . . The animal being anæsthetized with ether, and the jugular vein exposed, one hundred and fifty cubic centimetres of a solution of thyreoid nucleo-albumin (prepared by the sodium-chloride method and dissolved in a dilute solution of sodium carbonate) were injected. This did not cause the death of the animal; it was therefore killed by asphyxia, and the blood was found still fluid, and clotted in the usual manner on removal from the body. This single negative result was not regarded as conclusive, as one does occasionally obtain inactive preparations even from the thymus. It was, moreover, performed on a white rabbit, and white rabbits appear to be least affected by such injections. It was therefore repeated, and it was found that some preparations caused slight, and others very extensive, intravascular coagulation. In all, six experiments were performed, the animal being in every case anæsthetized with ether."

"*What is the source of the thyreoid nucleo-albumin?* As nucleo-albumin is obtainable from a great many organs which are composed chiefly of cells, it becomes a question whether the nucleo-albumin of the thyreoid is derived from the cells lining the acini or from the colloid contents of the acini.

"It was here that the recently introduced microchemical method of Lilienfeld and Monti came to my assistance. This method has for its object the microscopic localization of phosphorus in the tissues. Stated briefly, it consists in taking sections or teased portions of fresh tissues, soaking them in a solution of ammonium molybdate and subsequently reducing in a twenty-per-cent. solution of pyrogallic acid in water, or better in ether. The sections are then dehydrated, cleared, and mounted in Canada balsam in the usual way. The resulting coloration, yellow, brown, or black according to its intensity, indicates the presence of phosphorus. As a slight modification I found it advantageous, previous to transferring the sections to the ethereal pyrogallol solution, to wash them for a few seconds in a vessel of ether to which about a tenth of its bulk of water had been added. I have also found that fixing the tissues by a half-per-cent. solution of osmic acid does not interfere with the subsequent treatment by Lilienfeld's method. This also prevents the shrinkage, seen in alcohol-hardened sections, which also I sometimes used.

"Before proceeding to apply this method to the thyreoid, I made, with Professor Halliburton's assistance, a number of preliminary experiments with other tissues. In the case of the thymus the cells were stained a brown color, the nuclei a deeper tint; the corpuscles of Hassall were more deeply pigmented than the rest, and the muscular coats of the small vessels stood out very prominently. In the case of cartilage, we confirmed the observation of Lilienfeld and Monti that the matrix remains uncolored, the protoplasm of the cells is brown, and the nuclei dark brown to black. In the case of the umbilical cord, the contrast between the unstained mucinoid matrix and the connective-tissue cells is very well brought out. In the thyreoid the staining is just about equally intense in the cells and in the colloid matter they encircle and presumably excrete. Both are dark-yellow or brown. In the cells themselves there is little or no differentiation to be noticed between nuclei and cell-protoplasm. This does not appear to be due to lecithin, for the process is equally effective in alcohol-hardened specimens."

"To sum up, the microscopic method of localizing phosphorus demonstrates that the nucleo-albumin obtained originates in large measure from the colloid matter of the acini, and is not merely a product obtained from the cellular constituents of the organ."

"*Do these experiments throw any light on the question, To what does thyreoid juice owe its curative effect in myxœdema?* This difficult question can only be answered at present in a very tentative manner. It has been demonstrated that the colloid matter in the interior of the vesicles ultimately finds its way *via* the lymphatics into the blood stream. This internal secretion is absent in the diseases variously known as sporadic cretinism, cachexia strumipriva, and myxœdema; and, having adduced evidence that the colloid matter consists of or contains a nucleo-albumin, it is not altogether improbable that the nucleo-albumin is the active principle the deprivation of which causes the disease, and the administration of which cures it. If this is so the ultimate fate of the nucleo-albumin must still remain a question that requires an answer. It is not possible at present to say whether it is used as such for the nourishment by the tissues or whether it is first broken up and its nuclein liberated. Moreover, the material which constitutes the active principle of the thyreoid is not destroyed by the gastric juice, and nucleo-albumin fulfills this condition, in so far at least as its nuclein part is concerned. The question might be more definitely answered if nuclein were actually tried in the treatment of myxœdema; and, further, it would have to be shown whether or not thyreoid nuclein differs in this respect from nuclein prepared from other sources. I have not myself had the opportunity of testing the matter, having only yet had one case of the disease under my own care which was cured by thyreoid feeding. To this I may add that, testing the diffusibility of the thyreoid juice by means of parchment-paper dialysers, I found a distinct amount of proteid matter in the dialysate after twenty-four hours. Whether this has any bearing on its rapidity of absorption in the alimentary canal, one would not like to state definitely, seeing that evidence has recently accumulated to show that absorption is a very different process from physical diffusion.

"*Does the thyreoid contain a ferment which dissolves mucin?* The term myxœdema was originally given to that disease because it was believed that its chief feature was a swelling of the subcutaneous and other connective tissues, due to accumulation of its mucinoid stroma. It has, however, since been shown that the disordered metabolism that follows cessation of the thyreoid's functions goes deeper than that, and that excess of mucin is by no means a constant accompaniment of the disease. Moreover, in those cases where there is more mucin than normal, the slight increase can be accounted for by the fact that in all young connective tissues there is a smaller proportion of the fibrous and a larger proportion of the interfibrous material than in the fully formed tissue. Nevertheless it was thought advisable to try whether the thyreoid juice does contain a ferment that dissolves mucin, especially as the hypothesis of a ferment has been worked to explain the curative value of thyreoid treatment.

"White and Davies have prepared from the thyreoid a material which has curative value, and the method of preparation was that used for preparing ferments from other organs. An extract of thyreoid was made with equal parts of glycerin and water. The filtered fluid was then acidulated with phosphoric acid and calcium hydrate added until an alkaline reaction was obtained. The resulting precipitate was filtered off as quickly as possible, washed, and dried over sulphuric acid. The white powder so obtained is the curative agent in question. The fact that this has been used with clinical success does not, however, as Mr. White admits, prove the ferment hypothesis. Having prepared the substance by this method, I obtained a supply of mucin from umbilical cords. The mucin was extracted by means of dilute baryta water, and then precipitated by acetic acid from this solution. This was subjected in test-tubes kept at the temperature of the body to the action of fresh thyreoid juice, and in other cases to that of the supposed ferment preparation. But the results obtained were wholly negative. In no case was any change observable in the mucin or in its solubilities."

The general results of the experiments are summarized as follows:

"1. The thyreoid does not contain or yield any peptone or proteose.

"2. Its secretion is not mucin, as it yields no reducing sugar on treatment with dilute mineral acid.

"3. The only proteid that can be obtained in any quantity from it is a nucleo albumin.

"4. This is derived, at any rate partly, from the so-called colloid matter in the acini, as the microchemical method of Lilienfeld and Monti for the localization of phosphorus shows that it contains phosphorus.

"5. Experiments which had for their object the finding of a ferment in the thyreoid that dissolves mucin led to negative results; and it is suggested with all reserve that the nucleo-albumin is the material to which the thyreoid treatment of myxœdema owes its usefulness.

"6. Thyreoid nucleo-albumin causes intravascular coagulation."

Hysterical Facial Neuralgia.—At a recent meeting of the *Société médicale des hôpitaux*, reported in the *Mercredi médical* for March 7th, M. Gilles de la Tourette remarked that the best-known form of hysteria was the paroxysmal convulsive attack, and that had for a long time obscured all other forms. He reminded his hearers that in 1891 he had described a form of hysterical paroxysm characterized by pain in the course of the trigeminus nerve closely simulating tic douloureux, with which it had been confounded up to that time. The paroxysm was preceded by an aura, and ended in a special derangement of mind and the passing of an abundance of clear urine. The speaker then presented a patient, a man fifty-four years old, who was affected with this derangement. He had hemi anæsthesia on the left side, and on the right side of the face there was a hyperæsthetic hysterogenous zone irritation of which gave rise to the paroxysmal phenomena that he had described.

A Case of Death from Nitrous-oxide Anæsthesia.—Mr. John Adams lately read a paper before the new Society of Anæsthetists, of London, in which he gave an account of a death under the influence of nitrous oxide. The paper is published in the *Lancet* for March 24th. It seems that the patient, who appeared to be in good health, visited a dentist about an hour after a light luncheon. After waiting half an hour, he was admitted to the operating room, where he said that he wished to have a second right upper molar extracted while he was anæsthetized with gas. There was nothing tight about his neck, and there was nothing in his appearance to lead to the supposition that he was not a fit subject for the anæsthetic. He had a small, receding jaw and a short, thick neck, but there was no abnormal swelling of any kind which prevented his closing his mouth, as a published report had stated. An ordinary prop, attached to a strong fishing line, was placed between the upper and lower central incisors. After he had taken three or four inspirations of nitrous-oxide gas he took off the face-piece and said he felt nervous, but at the patient's own request the author went on with the administration. The man's breathing was shallow but regular, and when he had taken about two thirds of the usual quantity of gas the tooth was extracted quickly and without any difficulty. The breathing at once grew irregular and the man became more cyanosed, his muscles were rigid, and after three or four respirations he ceased to breathe, but there did not seem to be imminent danger. As the breathing was not continued, the prop was removed at once, the patient was transferred to the floor, and artificial respiration was begun within thirty seconds after the extraction, the tongue being pulled forward. The heart was beating regularly but not strongly, the body remained rigid, and there was no inspiratory effort. In about two minutes after the extraction of the tooth two or three expirations took place, showing, says the author, that there was no considerable obstruction in the larynx. Nitrite of amyl was applied to the nose and mouth, but the author judges that it could not have affected the patient, inasmuch as no inspirations took place. A subcutaneous injection of ether was given in the præcordial region, as the action of the heart had now become feeble. These measures having failed, tracheotomy was performed within three minutes of the discontinuance of the administration of the gas. The tracheal wound was kept open, and when artificial respiration was resumed about an ounce of mucus was forced out, only slightly blood-stained. Although air could be heard passing in and out of the opening in the trachea, there was no voluntary respiratory effort from first to last. The patient had now become still more cyanosed, and the heart was no longer to be heard beating. Artificial respiration was continued for twenty minutes longer, although with little hope of success. Micturition had taken place after the beginning of the administration of the gas, and the author remarks that he has not infrequently noticed this occurrence when cyanosis has been well marked, also in children. At the necropsy, performed at the request of the coroner, the body was found to be that of a man about twenty-six years old, muscular and well nourished. The face, neck, and back were deeply cyanosed. On removing the skull-cap, venous engorgement was visible on the surface of the cerebral hemispheres, but nothing abnormal was noticed in the substance of the brain. On opening the chest, the veins were seen to be everywhere full of dark fluid blood. All the internal organs were healthy. The pericardium contained a normal amount of fluid. The heart was normal and the valves were competent. All the cavities of the heart were empty, except that there was a small quantity of fluid blood in the right ventricle. There were no clots. The lungs were engorged with dark fluid blood and were nearly destitute of air. On opening the bronchi, the mucous membrane was found dark-colored and engorged, and a quantity of thick mucus was revealed in all the larger bronchi. The trachea also was engorged, but contained less mucus. The larynx showed no swelling and very little engorgement, and contained no appreciable quantity of mucus. There was no foreign body or any abnormal substance. The tonsils showed chronic enlargement, but they did not meet. The stomach contained a small quantity of undigested food, with a good deal of ropy mucus. The œsophagus was normal. The liver, kidneys, and spleen were dark-colored with venous engorgement, but showed no signs of disease. The bladder was empty.

The author states that he has administered nitrous-oxide gas to over forty thousand patients during the last twenty years, and has never before had a fatal case. It seems to him that the patient died from asphyxia, and he thinks that the mucous membrane of the throat, larynx, and bronchi was perhaps peculiarly insensitive, for during the whole time of the administration of the gas, and subsequently, there was no coughing or symptom of irritation, as is often the case when a quantity of mucus gets into the air-passages. As regards the quality of the gas, two patients had immediately before had it given to them from the same receptacle, without the slightest unusual symptoms, and it was used on the following day with good results.

Diuretin and Diuretics.—The *Hospital* for March 3d publishes a paper by Sir Benjamin Ward Richardson, M. D., F. R. S., in which he says:

"My first observations were made, if I may so say, casually —that is, I began to prescribe diuretin in small, increasing, and large doses in cases where a diuretic was supposed to be required, without special reference to cause. The first few administrations gave color to the idea that diuretin possesses the general powers claimed for it; but I soon found great variability in regard to its action, and was led to the conclusion to which Dr. H. A. Hare had arrived, that the greatest care must be taken in observation, in order that other agencies affecting the excretion of urine should not interfere with the correctness of the observer. It also seemed to me that in some instances symptoms followed the administration of the drug which were of a general kind, such as headache, depression, a little fever, somnolency, or slight delirium, symptoms which were not actually dangerous or alarming in degree, but which were inconvenient and which called for cessation of the administration, at least temporarily.

"I never witnessed, however, the symptoms of vomiting and diarrhœa which some have observed as after effects, and I considered that there was no direct evidence of cumulative action such as is observed from digitalis. Altogether, I looked upon diuretin as being a diuretic under some circumstances, but as one rather uncertain in its effects. In order, therefore, to watch those effects in a more systematic way, I noted them carefully in one or two particular cases where other diuretics had been prescribed.

"A man, sixty-two years of age, came under my care in hospital on July 9, 1892. He weighed two hundred and ten pounds and stood six feet two inches in height. He had been a night watchman and had remained at his occupation almost up to the date of his admission. He complained of great pain in his right side, and, on careful examination, was found to have a considerable effusion in the right pleural cavity, with probably some ascites. It was observed that he suffered from shortness of breath, especially at night, and a day or two after admission eighty-eight fluidounces of a clear serous fluid was removed from the chest by aspiration. The removal gave immediate relief, but the fluid soon reaccumulated, and three weeks later a hundred and twenty-four ounces were drawn off. Fluid also was collecting in the abdomen, and, to be brief, between August 17, 1892, and May 20, 1893, when the patient was discharged to go to a home, he had been tapped seven times in the thorax, fourteen times in the abdomen, and twice —by Southey's tubes—in the lower limbs, by which operations six hundred and thirty-two ounces were drawn off from the chest, three thousand and eighty-nine ounces from the abdomen, and two hundred and seventy-two from the lower limbs—in all, twenty-four gallons, three quarts, one pint, and thirteen fluidounces. He was greatly relieved each time by the removal of fluid, and, as his heart was natural, our diagnosis was chronic nephritis, with cirrhosis or chronic contraction of the kidneys. There was never any febrile state, but, on the contrary, a slightly subnormal temperature as a rule. He took his food well, and up to his discharge was in good spirits.

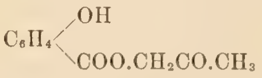
"As may be expected we did our best in this case to promote action of the kidney. There was no regular appearance of albumin in the urine, but the amount of urine secreted was at all times diminished, often to an extreme degree, so that some days fourteen ounces was the most passed, during which the reaccumulation of fluid in the abdomen and chest was rapidly increased, as if these cavities became supplementary receptacles for the water that ought to have passed off through its natural channel. In the course of general treatment the patient was, of course, judiciously limited as to the amount of watery fluids which he imbibed, and I think I may say every reasonable form of diuretic was administered to him without giving him any relief and without increasing in the least degree the quantity of the excretion. The case thus became one singularly good for testing the value of diuretin as a diuretic, and on March 17, 1893, diuretin was administered in five-grain doses, which were continued for three days without striking effect. The dose was then gradually increased to ten grains with such good action that after administration three times in the twenty-four hours seventy-five ounces of urine were discharged. Free diuresis was maintained for several days, when it gradually failed, with the appearance of symptoms which forbade the continuance of the drug. There was headache, considerable depression, undue somnolency, and a rise of temperature—symptoms which passed away within twenty-four hours on the discontinuance of the remedy. After the lapse of a few days, the amount of urine having become greatly diminished, I represcribed the diuretin in ten-grain doses without any definite action, but with recurrence of the objectionable general symptoms.

"In this instance diuretin failed to sustain free diuretic action and induced systemic symptoms similar to those which follow the administration of soda salicylate and sometimes salicylic acid, but without the deafness or noises in the head which occasionally follow the action of these drugs when they are carried to a toxic degree.

"The action of the diuretin in the case given was, I should assume, on the renal epithelium, leading in the end to obstruction, with an after effect on the nervous system produced either by the salt itself or by retention of urea, or a combination of both effects. That the action was not cumulative is shown by the fact that the symptoms quickly ceased when the substance causing them was withdrawn."

The Merritt H. Cash Prize.—The secretary of the Medical Society of the State of New York, Dr. F. C. Curtis, has issued a circular stating that the Medical Society of the State of New York offers a prize of one hundred dollars, payable from the Merritt H. Cash Prize Fund, for the best original essay on any medical or surgical subject. The conditions are: That the competitor shall reside in the State of New York and shall be a member of a county medical society; that the essay shall be either printed or type-written; that each essay shall be designated by a motto on the title-page and accompanied by a sealed paper bearing the same motto and inclosing the name of its author, in order that the name of the successful author alone may be ascertained; and that all essays shall be sent to the chairman of the committee on prize essays prior to January 1st, next. The committee consists of Dr. Franklin Townsend, Jr., 2 Park Place, Albany; Dr. A. Walter Suiter, Herkimer; and Dr. Charles Stover, Amsterdam. Secretaries of county medical societies are requested to communicate this to the members of their societies.

Salacetol.—The *Nouveaux remèdes* for March 8th contains the following *résumé* of an article by MM. Bourget and L. Barbey, published in the *Therapeutische Monatshefte* for December, 1893: Salacetol—



$$C_6H_4\begin{cases}OH\\COO.CH_2CO.CH_3\end{cases}$$

is obtained by heating monochloracetone with salicylate of sodium. It crystallizes in alcohol or ligroin in the form of scales or brilliant needles. It is slightly soluble in hot or cold water, and dissolves in hot alcohol, ether, carbon sulphide, chloroform, benzol, ligroin, etc. It has a slightly bitter taste, and melts at 160° F. Shaken up with an alkaline liquid, for example, a 0·6-per-cent. solution of caustic soda, it is dissolved and saponified—that is, it becomes split up into its component parts.

It is known that under the influence of intestinal alkalinity salol is split up into salicylic acid and phenol. Salicylic acid combines with alkaline substances (salicylate of sodium or potassium) and gives compounds which are destitute of any antiseptic action; in its nascent state, and before it is combined with alkalies, it is supposed to be a very energetic antiseptic. As for phenol, which is very poisonous, it gives the sulphocarbolates of sodium or potassium, which are not poisonous at all. This combination is due to the action of the liver, and perhaps also to that of the intestinal mucus; it does not occur except where there is a sufficient quantity of alkaline sulphides. Salacetol, therefore, should always be administered simultaneously with a certain quantity of sulphate of sodium. The latter may also be employed as an antidote to phenol. In this respect salacetol is superior to salol, as the former becomes split up in the intestine into salicylic acid and acetol. The latter is eliminated by the urine in the form of acetone, or oxidizes in its elements without injury to the organism, and without exacting from the liver such an amount of work as to irritate or overtax it. Salacetol passes through the stomach almost unchanged, without undergoing the least modification. Passing into the intestine, it becomes split up into acetol and salicylic acid. The latter is rapidly resorbed, the urine showing traces of salicylic acid in a quarter of an hour after the administration of fifteen grains of salacetol. Castor oil accelerates the resorption of salacetol. When it is given in the form of a powder, in a dose of thirty grains, from eight to nine grains of salicylic acid are found in the urine twenty-four hours afterward, but if it is given dissolved in four hundred and fifty grains of castor oil, at the end of twenty-four hours from twelve to thirteen grains are found. The causes for this more rapid resorption are, on the one hand, the slightly irritating action of castor oil, which gives rise to a more abundant secretion of the intestinal juice, consequently splitting up the salacetol in a more energetic manner, and, on the other hand, the intestinal peristalsis is rendered more active. Dilatation of the stomach does not influence the resorption of salacetol in any way. This resorption depending upon the intestinal alkalinity, it is easy to understand that it would be retarded by the pouring of a large quantity of acid gastric juice into the intestine. In this event, the intestinal juice, before coming in contact with salacetol, would necessarily have previously neutralized this gastric juice.

The cutaneous absorption of salacetol depends upon the substance in which it is incorporated. Salacetolized vaseline is not absorbed at all, while salicylic acid may be found in the urine from three to four hours after friction with salacetolized lard. Salacetolized lard with ten per cent. of oil of turpentine, and a solution of salacetol and chloroform in which lard and a small quantity of lanolin have been incorporated, are also completely resorbed.

Salacetol is an excellent antiseptic for the intestinal cavity. Given for two days in doses of from thirty to forty-five grains, dissolved in from three hundred to four hundred and fifty grains of castor oil, it has produced good results in choleraic diarrhœa. The intestine is disinfected as early as the third day. If the diarrhœa continues, the same dose is repeated. At the beginning of the third day salacetol alone is prescribed in daily doses of from thirty to forty-five grains. Children can take a grain and a half of salacetol for each year of their age.

In acute articular rheumatism the administration of thirty grains is followed in two or three hours by a falling of the temperature and lessening of the pain. If this dose is repeated from two to four times a day, the temperature becomes normal, and convalescence sets in as early as on the fourth or fifth day. The following ointment is recommended by MM. Bourget and Barbey for diseased joints: Salicylic acid, oil of turpentine, and lanolin, each, a hundred and fifty grains; lard, fifteen hundred grains. Salacetol also is prescribed in doses of fifteen grains, given morning and evening. They have obtained excellent results with this treatment. Muscular and chronic rheumatism have also been treated successfully with salacetol, and favorable results have been observed in cases of biliary lithiasis from the use of this medicament dissolved in castor oil. In these cases thirty grains of salacetol, dissolved in almond oil or (especially in winter) in cod-liver oil, were given every day for three or four weeks. On the whole, salacetol may replace with advantage all other salicylized preparations, and its employment is especially recommended for children.

The American Medical Association.—The committee of arrangements has issued a circular announcing that the rates have been reduced to sixty dollars for a round-trip ticket from the Missouri River points to San Francisco, and that the same reduction will be made between the Missouri River and Chicago and between Chicago and the Atlantic points, practically making the round trip a single fare.

Lectures and Addresses.

LECTURES ON THE DIAGNOSIS OF ABDOMINAL TUMORS.

By WILLIAM OSLER, M. D.,
PROFESSOR OF MEDICINE, JOHNS HOPKINS UNIVERSITY.

Lecture IV.—Tumors of the Gall Bladder.*

The gall bladder may be dilated or its walls infiltrated with a new growth. In a large proportion of all cases these conditions are associated with gallstones. Of six cases in which the gall bladder presented either tumor or enlargement, three were due to gallstones, one to compression of the common duct by malignant disease, and in two the walls were infiltrated with cancer.

(*a*) Dilated Gall Bladder.—The organ may form a small, firm, rounded projection beneath the edge of the liver, a pyriform tumor of varying size and freely movable, in exceptional cases a very large tumor reaching to the pelvis, or, indeed, as in a case reported by Tait, a huge cyst occupying the greater part of the abdominal cavity. The usual causes of dilatation are blocking the ducts with calculi and compression of them by new growths. The greatest dilatation is associated with obstruction of the cystic duct. Permanent blocking of the common duct does not necessarily lead to very great distention of the gall bladder. The contents of the dilated organ may be a clear mucoid fluid when the obstruction is in the cystic duct and very prolonged; bile most frequently when the obstruction is in the common duct; pus or a puriform bile-stained fluid when suppuration has occurred, and an albuminous or bloody fluid in cancer of the walls. I will first read to you the cases in which the gall bladder formed a prominent tumor. Two of these were associated with gallstones and one with obstruction of the common duct by cancer. The diagnosis, which seemed perfectly clear, was confirmed in one case by operation and in another by autopsy. But before I do so let me call your attention to two monographs, the most important contributions to the literature of cholelithiasis which have been made for some years. Professor Naunyn's work, *Klinik der Cholelithiasis*, deals particularly with ætiology and symptomatology, while that of Professor Riedel, *Erfahrungen über die Gallensteinkrankheit, mit und ohne Icterus*, is of very special value to workers in clinical medicine, and illustrates in an interesting way the close interdependence of medicine and surgery. His careful study of an extensive series of cases upon which he had operated enlarges in certain directions our knowledge of the symptomatology of gallstones, more particularly of the cases without jaundice.

Case XXXVI. *Gall Bladder forming a Visible Tumor; Operation; Recovery.*—Elizabeth D., Lonaconing, Alleghany County, Md., aged sixty-two years, seen with Dr. Kelly. She had been married thirty-eight years; had six children; three miscarriages; labors non-instrumental, but tedious. Family history good. Has always been well until the present trouble. In December, 1891, she fell against the curbstone and struck the right side. At the time she felt very little pain, but remarked that she had had a great "shaking up." Some time in January, she does not know exactly when, she noticed a lump in the abdomen which changed in position as she moved in bed. It has not, she says, got any larger since January. Five weeks ago she one night became jaundiced. She is positive that the skin was clear one day and the next morning pretty deeply jaundiced. The stools were clay-colored, and remain so. Since then the bowels have been at times loose, sometimes three or four in a day. The urine became high-colored; the skin has been itchy, and the pulse rate very slow. She has lost somewhat in weight; she has had *no chills, no fever, and no sweating.*

Present Condition.—Large, well-nourished woman; the skin of an orange-green color; tongue clean; pulse, 32; temperature normal. The abdomen is enlarged and flabby. On the right side, midway between the costal margin and Poupart's ligament, there is to be seen a hemispherical prominence, which moves up and down with respiration. On palpation the abdomen is everywhere soft, not painful. The liver can be felt in the epigastric, right umbilical, and right hypochondriac regions, firm and resistant, and in the middle line the margin can be felt about two fingers' breadth above the navel. In the right parasternal line a distinct notch can be felt, the separation probably between the right and left lobes. In the nipple line the edge reaches to the level of the navel and in the anterior axillary line nearly to the level of the anterior superior spine. The prominent mass which is seen with such distinctness can be felt a hand's breadth below the liver margin; it is smooth, rounded, resistant, and as the fingers are pushed beneath it there is the impression of a globular body. It can be freely moved from side to side, and changes in position as she turns to the left. The dotted line in the diagram indicates the position when she rolled over on the left side; the fundus of the gall bladder then almost reaches the middle line.

The surface of the liver is smooth. There are no nodules. On deep inspiration the spleen can not be felt; there are no glandular enlargements. There is a systolic murmur at the apex of the heart, but the sounds are clear at the base. The stools are clay-colored; the urine contains much bile pigment.

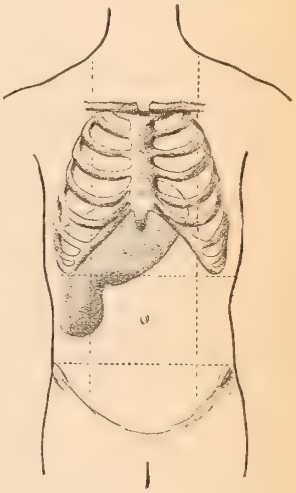


Fig. 30.—Showing the position of the gall bladder in Case XXXVI.

November 7th.—This morning Dr. Kelly made an incision fifteen centimetres long over the tumor. On opening the peritoneal cavity the liver looked of a dark greenish-brown color. Projecting beneath the edge of the right lobe for a distance of about five centimetres was the rounded end of a dilated gall bladder. The liver substance above it was considerably atrophied. There were no adhesions. The chief bulk of the dilatation was beneath the liver, and the dilatation was much greater than indicated by the portion which could be felt projecting beyond the edge. One hundred and fifty cubic centimetres of turbid, grayish pus were removed with the aspirator. Calculi could be felt in the cystic duct and at the first portion of the common duct. After aspiration the gall bladder was carefully stitched to the external wound and incised and a large gall stone removed weighing thirty-eight grammes. The stone occupied the cystic duct and projected into the common duct.

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* Delivered December 6th.

The points of interest in connection with this case are, in the first place, the easy diagnosis of dilated gall bladder on account of the position and character of the tumor. It seemed most likely, too, that the dilatation and the jaundice were due to gallstones, though she had never had attacks of biliary colic. In all probability the cystic duct was blocked by the large stone as early as December, when she fell against the curbstone; she is positive that the lump on the right side has been present ever since that time. The sudden onset of the jaundice five weeks ago was connected doubtless either with the moving of the stone into the common duct or the extension of inflammation from the cystic duct to it; most probably the former.

A second point of great interest in the case is the existence of an empyema of the gall bladder without chills or fever. In all probability the suppurative process was confined to the gall bladder and had not extended to the general bile passages, associated with which, so far as I know, there is invariably fever of a septic type.

The patient did very well. Much bile-stained material escaped from the wound, the jaundice became distinctly lighter, and bile appeared in the fæces. By the 14th of November the skin was much less yellow, the urine lighter in color, and the itching of the skin had entirely ceased. She improved rapidly, sat up by November 21st, and was discharged on December 14, 1892.

Case XXXVII. *Attacks of Gallstone Colic; Tumor of Gall Bladder.*—Miss S., aged about forty-eight years, seen with Dr. Ames, June 16, 1893, complaining of swelling and pain in the abdomen. Patient has been delicate from childhood, and has been for years a chronic invalid.

When about ten years of age she had a severe illness and for some time could take no nourishment without severe abdominal pain. Dr. Buckler thought that it was possibly ulceration of the stomach. When twenty years of age she had a similar illness—evidently protracted, painful dyspepsia. When thirty-five years old she had a severe attack of liver colic, in which she changed color and was slightly jaundiced. She has had since that time many attacks of pain, particularly at night, after a very trying or exhausting day. At forty-three the menopause began, following which she had a nervous breakdown and went to Italy, and for a couple of years she had a great deal of intestinal trouble. After returning, on September 6th of last year, she had a very severe attack of colic and was extremely weak. These attacks of colic have occurred throughout the winter and the last one she had was only a few weeks ago.

Present Condition.—Small-framed woman, looks ill, very anæmic and sallow; no definite jaundice; no special emaciation. Pulse 92; tension a little increased.

Abdomen flat, natural-looking. Palpation is everywhere negative until one reaches the liver region. Here inside the nipple line there is a definite rounded projection, the outlines of which can be readily determined, particularly below and to the left. It projects as a somewhat conical mass and is rounded at the right border. It is a little painful on deep pressure. The fingers can not be inserted definitely beneath it, but on either side the edge of the liver is distinct; as she draws a deep breath the fingers seem to pass over a prominence into a depression on the surface of the liver just at the level of the costal margin. During the attacks the projection, as she calls it, forms a prominent tumor which can be seen beneath the skin and is then exquisitely sensitive. The liver dullness extends to the upper border of the sixth rib. The right kidney is distinctly palpable and descends below the edge of the liver, from which it can be readily separated.

At a subsequent examination the tumor was not nearly so large, and she insists that it is extremely variable in size. Whenever the colic is severe the tumor becomes very much more prominent, a point confirmed repeatedly by Dr. Ames. She is excessively anæmic, and though anxious for an operation, it was thought best to postpone it until the condition of her blood was more satisfactory.

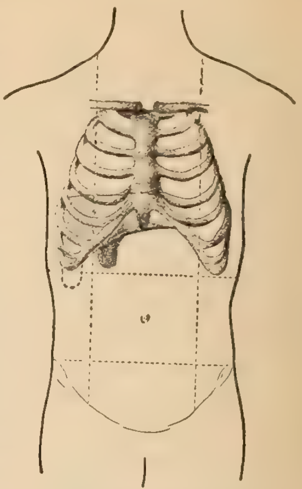
Fig. 31.—Showing the position of the gall bladder and outline of the right kidney.

Additional Note.—The tumor mass in the epigastrium developed considerably and became very much firmer, reaching almost to the level of the navel. The patient herself said that it had undergone a change, and she had a good deal of pain at intervals. She was very urgent that an operation should be performed, and, as her general condition seemed fairly good, Dr. Tiffany, on January 9th, made an exploratory incision. The gall bladder projected between two and three inches below the margin of the liver. A coil of the small intestine, and also the transverse colon, were firmly adherent to it, and over its surface there was a definite vascular membrane. There were numerous adhesions between the upper surface of the liver and the diaphragm. The gall bladder felt firm, and at its fundus there was a nodular mass. When it was opened a bile-stained mucus exuded and the whole organ appeared filled with a semi-solid, friable, grayish-yellow mass. Fragments removed with a curette, particularly the scrapings of the wall, had a grayish-white appearance, and looked like a new growth. On microscopical examination they consisted of large, irregular cells, many of which were in a state of fatty degeneration.

After doing well for three or four days the patient began to complain very much of pain in the lower part of the abdomen. There was no swelling, and until the evening of the 14th there was no fever. On the 15th the pulse was more rapid, and she seemed very much weaker. She was worried about not having had an action of the bowels, and was a good deal exhausted in an attempt to get them relieved. About one o'clock she became feebler, gradually sank into a condition of unconsciousness, and died about 5.30 in the afternoon.

Autopsy, Jan. 16.—The wound of the skin and the incision in the gall bladder had both united well. After turning back the skin flaps, the intestines were found to cover the gall bladder everywhere, except at a small area just below the liver margin in the nipple line. The portion of the right lobe of the liver adjacent to it was considerably elongated, and consisted of a grayish-white atrophic tissue. The stomach was distended and the duodenum was pushed forward and much dilated with gas. It was opened *in situ*, and its posterior wall found to be in close contact with the gall bladder. The bile papilla, which was in the transverse portion of the duodenum, was not occluded. After dissecting off the duodenum the tumor beneath it was seen to be the greatly distended gall bladder, somewhat larger than a closed fist. It was deeply placed, lifted the head of the pancreas and the duodenum, as already mentioned, and was in contact with the right side of the vertebral column. It was readily and freely lifted from its bed, and then was seen to project about eight centimetres below the liver margin. The transverse colon was adherent to it, and just at the point of their union there was a nodule of new growth of the size of an English walnut. On incising the gall bladder, a small quantity of turbid bile exuded, but the entire viscus was occupied by a globular new growth, which was everywhere free, except at the upper wall, where it was densely adherent and had grown into the substance of the right lobe. It did not extend to the neck of the gall bladder, and the orifice of the cystic duct was free.

On section, the mass consisted of a fresh, grayish neoplasm, on its surface much bile-stained. There were six or eight small black, irregular gallstones. There were no secondary nodules in the liver. The common duct was free. The stomach and intestines looked normal. There was a small cyst of the left parovarium, which was united to the rectum by old, firm adhesions.

Case XXXVIII. *Enlarged Gall Bladder; Jaundice; Cancer of the Head of the Pancreas.*—Mr. M., aged fifty-one years, seen April 26, 1893, with Dr. W. W. Johnston. The patient is a large man, very active in business, and with an excellent family and personal history. He had a slight attack of jaundice during the civil war. Has not been a heavy drinker. Was well and strong until toward the end of last year. He had a mental shock and worry in October which distressed and disturbed him a good deal, and he had dyspepsia on one or two occasions before Christmas. Early in January he had a very severe attack with vomiting, and then began to lose in weight and had uneasy sensations in the epigastric region, but no sharp, acute pain. About the middle of January he noticed that he was yellow in color, and the jaundice, increasing in intensity, has been permanent. The stools have been clay-colored; the urine very much bile-tinged. He has had no itching, nor has the pulse ever been slow. He has lost progressively in weight, thinks as much as forty or fifty pounds, and has become very weak, though he has kept up and about and until two weeks ago has attended to his business.

Present Condition.—Intense olive-green jaundice; moderate emaciation; pulse, 82; fair volume; moderate tension; vessel not sclerosed.

Abdomen prominent, and percussion and palpation demonstrate the existence of moderate ascites, which, Dr. Johnston says, has not materially changed for several weeks. On palpation, no pain, nothing abnormal to be felt until toward the right costal margin, below which the liver extends for about an inch and a half in the parasternal line. In the anterior axillary line, about two inches in front of the cartilage of the tenth rib, there is a firm, rounded, nodular body the size of the top of a lemon, which is attached to the liver and projects definitely beyond its edge. It feels like a distended gall bladder, but it is unusually hard, firm, and inelastic, and it is not movable from side to side. On deep inspiration, the surface of the liver above it can be felt to be distinctly depressed. In the parasternal line the edge of the liver is irregular, and there appear to be one or two nodules. In the middle line, on deep inspiration, the surface of the left lobe also appears rough and irregular. The spleen is not palpable. The stomach does not appear to be dilated. Examination of the thoracic organs is negative.

Patient died May 7, 1893. The autopsy showed cancer of the pancreas, with secondary nodules in the liver. The gall bladder was greatly distended and projected beyond the edge of the liver, and formed the tumor which had been so plainly to be felt during life, measured about six inches in length and about three inches in diameter, and was full of a light-greenish fluid. The walls were not indurated.

In the diagnosis of the tumor caused by dilatation of the gall bladder there are details to which I may here refer. The patient should be recumbent, in a perfectly easy posture, with the abdominal walls as much relaxed as possible. Sometimes, as in Case XXXVI, a prominent tumor is at once visible, descending with inspiration, or there may be a swelling of considerable size in the right half of the abdomen. More frequently, however, inspection is negative, and the facts must be elicited by careful palpation. The facility with which this procedure can be carried out depends upon the degree of rigidity of the abdominal walls, and a thorough examination may be impossible without anæsthetizing the patient. Bimanual palpation is the most satisfactory. Sitting by the side of the patient, the left hand beneath the lower ribs, with the right upon the abdomen, a little below the costal margin in the nipple line, gentle palpation with the pads of the fingers is first made during quiet breathing. The patient is then asked to draw a deep breath, and gentle but firm palpation is repeated, the fingers of the right hand following the receding abdominal walls. The anterior edge of a normal liver can in this way be readily felt, and any marked projection of the gall bladder detected. On the whole, I think you will find it more satisfactory to use the fingers of the right hand for palpation, but it is possible also to use the thumb of the left hand in the method described by Glénard, his *procédé du pouce.* The left hand grasps the right flank with the fingers behind. With the thumb, which is then free, the edge and surface of the anterior part of the right lobe of the liver can be readily felt, as the organ descends during inspiration. The facility with which this procedure can be carried out depends somewhat upon the length and mobility of the thumb.

Situation and General Characters.—The position varies with the size of the tumor and the existence of enlargement of the liver. Moderately distended in a liver of normal size, the gall bladder may be felt projecting beneath the costal margin opposite the end of the tenth costal cartilage. It is superficial, appearing to lie immediately beneath the abdominal wall. The long axis may be parallel with the nipple line. More frequently, however, the direction is somewhat to the left, as indicated by Fig. 31. The tumor is usually to the right of the parasternal line, but it may be directly in or even to the right of the nipple line, while in other instances it may be chiefly to the left of the parasternal line. The fingers may be placed directly beneath it, and the sensation given is that of a smooth, rounded body, larger at the lower end than above—that is, pear-shaped. While the outlines below are usually readily defined, toward the liver they are obscure, and no definite edge can be felt above the tumor. This is a point of importance in the differentiation of floating kidney. Sometimes the tumor appears to be turned forward on its axis, like a gourd, and a groove may be felt separating it from the liver. As a rule, palpation is not accompanied with much pain. The sensation conveyed to the finger is usually that of a tense, firm, elastic body. This is not always the case, for an enlarged gall bladder may be extremely flabby and soft, and is then difficult to feel. On the other hand, it is to be remembered that in long-standing cases of cholelithiasis there may be complete calcification of the walls of the gall bladder, forming a tumor of stony consistence. The size of the tumor projecting beyond the liver margin is some measure of the degree of distention of the gall bladder, particularly when the dilatation is due to plugging of the cystic duct. When the common duct is obstructed there may be great dilatation of the gall bladder and ducts with only a slight tumor projecting beyond the costal margin. I have reported a case, operated upon by the late Dr. Agnew, in which the fundus of the gall bladder projected only 2·5 centimetres, but on lifting up the liver it was seen that the distention was chiefly beneath the margin, and eighteen ounces of bile were removed by aspiration. While these statements hold for moderate dilatation of the gall bladder, you must remember that there are instances on record in which the tumor is exceptionally large, extending to the pelvis, occupying the entire right side, or even filling the abdominal cavity like a large ovarian cyst.

You will have noticed in the reading of the report of Case XXXVI that the tumor was extremely mobile and that the patient herself noticed its variability, and, projecting as it did so plainly, the alterations in position could be seen. The mobility during respiration is also well marked and it may be seen to descend with inspiration. On palpation the tumor may be moved freely from side to side. On the deepest inspiration, however, it can not be grasped and held in position as is possible with an extremely mobile kidney.

Nature of the Contents.—In a doubtful case of tumor projecting below the right costal border aspiration may be practiced, using a fine needle and exercising caution that the bowel does not lie between the tumor and the abdominal wall. The contents of a dilated gall bladder are either clear mucus, which is most common in prolonged obstruction of the cystic duct; bile, when the common duct is blocked, though when occluded for a prolonged period the entire bile passages, including the gall bladder, may be filled with a thin mucus. Pus is met with frequently, usually general symptoms indicating that suppuration has occurred; and, lastly, blood may be present in cases of neoplasm of the gall bladder. In acute phlegmonous inflammation due to calculus, the gall bladder may contain a dirty, brownish-red, ill-smelling fluid.

From growths at the pylorus and in the colon, which may occupy a similar position, the gall-bladder tumor is, as a rule, readily distinguished, both by the differences in the symptoms, and particularly by the systematic local examination, using also the inflation of the stomach and intestine. To two conditions I would, however, call your attention. In stout persons, and when the abdominal walls are unusually tense, movable kidney on the right side may be mistaken for an enlarged gall bladder. Only, however, when the kidney is very movable does it descend so low and so far to the left that this mistake could occur. It does sometimes, however, emerge beneath the liver margin as a rounded tumor in a most deceptive manner. With the patient recumbent and the kidney in its natural position, no tumor is evident; but on change of position (turning to left) or on deep inspiration it then appears. A movable kidney on the deepest inspiration, with the fingers placed above it, can be held down and prevented from returning during the expiratory movement. A gall bladder tumor rises and falls with the respiratory movements, and can not be held down during expiration. Again, above the rounded surface of the kidney, the sharp margin of the liver may be felt with great distinctness, whereas in gall bladder tumor the upper limit is not to be defined, and there is no sharp edge above it.

An interesting anatomical condition of the liver which you must learn to recognize has been referred to—particularly by Professor Riedel—namely, a tongue-shaped process of the anterior margin. A knowledge of its existence may save you from error. I show you here the outline as given by him in one of his cases (Fig. 33). He believes that this extension is seen particularly in women whose livers have suffered from the effects of lacing, but it is directly caused by traction, the gradually distending gall bladder elongating the anterior margin. In twelve of the cases upon which Riedel operated this tongue-like process was present; in nine instances the gall bladder was palpable either at the median or under margin of the process. In Case XXXVIII I believe this process is present. It is not always, however, associated with dilated gall bladder, and I have seen very curious elongations of the anterior margin of the right lobe in perfectly normal livers, and in several instances of the posterior margin of the left lobe. It is important to recognize the existence of this process as it may form a very definite mass in the right flank. A very interesting instance of it was referred to me by Dr. Weir Mitchell two years ago. An extremely nervous woman, aged about fifty-six years, had had for several years symptoms of neurasthenia, pains in the abdomen, and ill-defined manifestations, for which she had sought relief in many quarters. In his note to me Dr. Mitchell stated that there was a tumor of doubtful nature in the right flank. I saw the patient with her relative, Dr. Tilghman. The only interest in the case is in the examination of the abdomen. Just beneath the right costal margin, extending toward the anterior superior spine, was an elongated mass with very ill-defined borders. The fingers could not be inserted beneath it, nor was there a definite edge palpable. It was tender on pressure, not movable in a lateral direction, but with the fingers deep in the flank

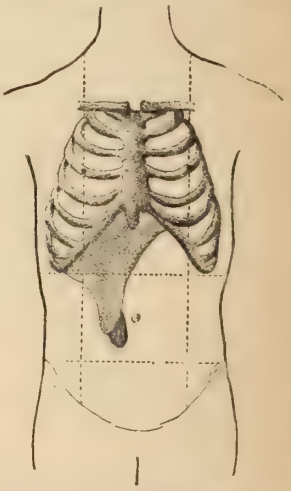

Fig. 32.—The tongue-shaped extension of the anterior margin of the right lobe, with the gall bladder projecting below it. (Riedel.)

behind it could be tilted forward. It did not seem to be continuous with the liver, the dullness of which terminated just below the costal margin. It descended somewhat with the respiratory movements. The right kidney was not palpable. Altogether I was puzzled by the condition, and could not give a positive opinion as to the nature of the trouble. She had a good deal of abdominal pain and distress, most of which I thought was associated with nervous dyspepsia. As there had been some uterine trouble I suggested that the pelvic organs should be examined. Subsequently, she came under the care of my colleague, Dr. Kelly, who at once discovered the tumor in the abdomen and, with the advantage pertaining to surgery, he very quickly determined by laparotomy the nature of the tumor—namely, an elongation from the right lobe of the liver. He writes: "There was no visceral trouble, excepting the enormously elongated thinned-out lobe of the liver, which extended down on the right side at least four inches below the normal position, and seemed to be an elongation of the anterior margin. The gall bladder was not enlarged." *

(*b*) CASES WITH ILL-DEFINED NODULAR TUMOR AT LIVER EDGE, SUPPOSED TO BE GALL BLADDER.—While the presence of a well defined tumor is of the utmost importance in the diagnosis of gall bladder disease, there are cases in which we have to be content with less positive evidence. A special value of Professor Riedel's work in relation to the diagnosis of gallstones lies in a somewhat startling revision of accepted data regarding the cardinal symptoms of this disease. Thus, ten of the fifty cases upon which he operated had never had colic; only fourteen presented a definite tumor, and a majority had never had jaundice.

The following cases are of interest from the fact that a small nodular tumor was felt in both, not very clearly defined; in one the history of severe and protracted attacks of colic seemed clearly to indicate the presence of gallstones, while in the other case the condition was more doubtful.

CASE XXXIX. *Severe Attacks of Colic for Five Years; Nodular Tumor at Edge of Liver; Operation with Removal of Three Hundred Gallstones.*—August W., aged forty-two years, seen April 28, 1893. Sent by Dr. Salzer.

Patient is a large-framed, well-built man; has always enjoyed excellent health, with the exception of malaria twelve or thirteen years ago. Has always had a very good appetite and has been a heavy eater. He has not been a dyspeptic, but has been troubled at times with constipation, but until the onset of his present illness he always regarded himself as a very healthy man.

He comes complaining of attacks of severe and protracted pain in the abdomen, which began five years ago. While walking in the garden one evening he had severe colicky pains, like cramps, which lasted throughout the greater part of the night; he was not jaundiced and the attack was regarded as one of simple colic. Six months afterward he had a second and more severe attack, which came on suddenly in the same way. Subsequently the attacks became more frequent, and he had at least six or seven in the second year, and they have gradually increased until he has been rarely a month or six weeks without pain. He has only once had vomiting with the pains, and never brought up any blood; has never had diarrhœa, most frequently has been constipated. The pain begins as a rule in the upper abdomen, radiates to the back, and sometimes is very diffuse throughout the back and sides. Its duration varies extremely; thus, the day before yesterday he had a severe attack; yesterday he was free from pain. In a bad attack he is quite incapacitated, and can not straighten himself to walk. He never has had bloody urine after the attacks, and never has passed gravel. The early part of this winter the colic was very severe and he lost considerably in weight. I could get no history of jaundice from the patient or from his wife, but Dr. Salzer informs me that at least twice icterus followed the attacks of severe pain.

Present Condition.—Face is flushed; color good; venules of cheeks a little dilated; conjunctivæ not stained.

Abdomen is full; panniculus well preserved; on palpation everywhere soft. In nipple line, three fingers' breadth below costal margin, he winces on pressure, and here is to be felt an irregularity at the edge of the liver. In middle line the edge is indefinite; in parasternal line the liver can be felt about two fingers' breadth below margin, and there is an ill-defined, rounded, somewhat nodular mass in this situation, which moves with respiration. It is sensitive on deep pressure. Liver dullness begins at the seventh rib and extends to the costal margin in parasternal, and a finger's breadth below in nipple line.

The edge of the spleen is not palpable, but dullness extends from the eighth to the eleventh ribs in midaxillary line.

The stomach is not dilated; thoracic organs negative.

The diagnosis of gallstones was made and he was advised to have an operation.

May 4th.—Dr. Halsted opened the abdomen and explored the gall bladder. It was found that the irregular mass at the edge of the liver was due to a marked projection of the anterior border. It was not to the left of the notch of the gall bladder and did not form a definite tonguelike extension, but was rather an irregular projection of the border. There were numerous adhesions between the under surface of the liver and the colon. The gall bladder did not look enlarged. It was laid open and found to contain a clear mucoid fluid and about three hundred gallstones of various sizes, chiefly very small, but one at the orifice of the cystic duct was the size of a small cherry. The patient reacted well from the operation, had no fever, and made a satisfactory recovery.

In the following case, led astray by a nodular prominence at the edge of the liver, I thought the condition was possibly gallstones in the common duct; but unfortunately the exploratory laparotomy did not give us any definite information.

CASE XL. *Enlarged Liver; Nodular Tumor at Margin; thought to be the Fundus of Gall Bladder.*—Henry L., aged thirty-three years, traveler for a spirit house, was admitted November 1, 1892, complaining of jaundice.

Father died at sixty years of paralysis; mother and seven brothers and sisters living and well.

Patient has always been well and strong. The only serious disease was diphtheria at his fifteenth year. Patient has been a pretty steady drinker, chiefly of beer; has had gonorrhœa, and was under treatment many years ago for syphilis, the constitutional symptoms of which were very slight. He has never had hæmorrhoids.

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* Those interested in the subject may consult with advantage Hertz's recent work, *Abnormitäten in der Lage und Form der Bauchorgane bei dem erwachsenen Weibe, eine Folge des Schnüren und Hängebauches.*

He has not been feeling very well for a year or more, and has been depressed in spirits owing to domestic troubles. He has been at work until a month ago. The present illness began two months ago, when he noticed that he was gradually getting yellow. There were no pains at the outset; no colic; nor had he nausea or vomiting. The appetite was good; the bowels were regular, and he did not feel badly enough to stop work for more than a month after the jaundice appeared. He had at times a sense of weight and dragging in the liver region, but never any pain. He has lost gradually about twenty pounds in weight within the past few months.

Present Condition.—Patient is a well-built, spare man; not specially emaciated; skin and conjunctivæ of a tolerably intense yellow color. The temperature is normal; pulse 64, full, regular; tension a little increased and the vessel wall slightly thickened. Thorax is barrel-shaped; resonance everywhere clear; no adventitious sounds. The heart beat is in the normal position; the sounds are clear, and the second, at the aortic cartilage, is decidedly accentuated.

Abdomen is enlarged, particularly in the upper zone, and is prominent in the right hypochondriac region. On palpation the whole of the right hypochondriac and epigastric, and part of the umbilical regions are occupied by a firm, resistant mass, corresponding to an enlarged liver. The lower border extends to within about three centimetres of the umbilicus and passes under the right costal margin at the junction of the eighth and ninth costal cartilages. The flatness begins at the sixth rib in the nipple line. The surface is, as a rule, smooth, though toward the navel slight irregularities are felt. The edge is not very well defined. A little within the nipple line, at about five centimetres to the right of the navel, there is felt on deep palpation a little projection, rounded, somewhat nodular, and which appears to be attached to the liver border. It is not movable, and is in the position and extremely suggestive of the tip of the gall bladder projecting beneath the liver margin. The edge of the spleen was just palpable on deep inspiration. The splenic flatness began in the eighth interspace. The stomach was not dilated and the gastric juice contained free hydrochloric acid.

The urine was bile-stained, clear, acid, 1·025, contained a trace of albumin and a few hyaline and granular casts.

The patient remained in hospital three weeks. The jaundice varied considerably in intensity, and the complexion got at times very much clearer. The stools were clay-colored, and at no time were of such tint as to indicate that at any rate much bile passed into the intestine.

During his stay in the hospital the patient gained a couple of pounds in weight, his appetite was good, and he was always able to be up and about.

The nature of the trouble did not seem at all clear. The patient's habits, the length of time the liver had been enlarged, the size of the organ, without ascites, favored the view that he had a form of hypertrophic cirrhosis, to which even the intensity of the jaundice was not opposed. The question of syphilis was also discussed. The stools, however, had rather the character of a definitely obstructive jaundice, and at times he was intensely yellow. There seemed a possibility that the common duct was obstructed, and, though he had not the intermittent fever and chills so common in the impaction of a gallstone in this part, yet the jaundice was variable, and the nodular mass at the edge of the liver was suggestive, to say the least, of enlargement of the gall bladder. He wished for an operation to determine the nature of the trouble, and agreed to return for an exploratory laparotomy.

January 2, 1893.—Patient came back to-day in practically the same condition; but he has gained a couple of pounds in weight. There is no change in the liver, and the nodular enlargement can still be felt. The skin is deeply jaundiced, the stools clay-colored, and the urine very dark.

6th.—This morning Dr. Halsted did an exploratory laparotomy. An incision was made about three inches below the costal margin, just above the border of the liver and following its curve. When the peritonæum was opened there appeared to view, covering the entire surface of the liver, a smooth structure, covered by peritonæum, looking like omental tissue, containing vessels and fatty tissue. It was adherent to, but could be moved like a skin upon the surface of the organ. The nature of it was doubtful. There were numerous adhesions between the edge of the liver and the transverse colon, which had to be separated, and the lower surface of the liver was united by adhesions to the adjacent parts. In the separation of the adhesions there was a good deal of bleeding, and the vessels had to be tied. The gall bladder was not found, and it was impossible under the circumstances to make a satisfactory dissection of the gastro-hepatic omentum. Nothing abnormal was felt about the head of the pancreas, and no stone could be felt in the duct. The edge of the liver itself was irregular, and at a little distance from the margin there was a distinct indentation or groove. The nodular mass which we felt so repeatedly was, in all probability, a projecting portion of this ledge-like edge. The membranous fold already mentioned was loosely adherent to the surface of the liver, and, when lifted up, there were numerous bleeding points which had to be touched with the Paquelin cautery. The surface was somewhat irregular, roughened, of an intensely bluish, almost plum color, and looked like an organ in a state of hypertrophic cirrhosis.

It did not seem possible to be able to determine precisely the nature of the remarkable fold of membrane covering the liver. It covered the left lobe and extended up as far as could be felt. It seemed more like a large properitoneal membrane covering the liver. It was outside of the liver capsule, which was not itself thickened.

I heard from this patient last on November 6, 1893. His jaundice had all disappeared, and the stools and urine are natural. He had improved a good deal, but the dropsy had been very much worse, and he had been tapped twelve times.

(*c*) CANCER OF THE GALL BLADDER.—New growths of the gall bladder, which are not very uncommon, have of late attracted much attention, particularly in their relation to gallstones. The diagnosis is in some cases easy, in others extremely difficult, and if the patient has had attacks of gallstone colic, and presents a rounded tumor mass below the edge of the liver, the condition is very naturally regarded as simple dilatation of the gall bladder. The following cases, which have been under observation, illustrate certain points in the diagnosis:

CASE XLI.—*Persistent Jaundice with Emaciation and Ascites; Nodular Tumor at Edge of Right Lobe.*—Magdalen H., aged fifty-two years, admitted to Ward G on October 18, 1892, complaining of swelling of the abdomen and legs.

Her father died of tuberculosis. No history of cancerous disease in the family.

The patient has always been very healthy, was married at twenty-two; had one child. She has been troubled for many years with constipation. She has never had attacks of colic.

The present illness, dating from about the middle of June, began with vomiting, after which she became yellow and had itching of the skin. The jaundice has never entirely disappeared. The legs became swollen about the end of August, and the abdomen six weeks ago. There has been pain in the back, so that she always has to lie on the side; otherwise she has not had much distress. The stools have been yellow. She has had but little vomiting. There has been progressive loss of weight, and she has become very weak.

Present Condition.—Patient is much emaciated, and has an intense olive green jaundice. There is general anasarca. The abdomen is extremely distended, and the lower zone of the thorax is expanded. Without going into details foreign to the main point, it may be said that she had all the signs of obstructive jaundice, and an ascites which required frequent tapping. The immediate interest of the case was in the condition of the liver. After tapping, the liver was distinctly palpable, and in the parasternal line the rounded edge could be felt about two fingerbreadths from the costal margin. Passing toward the flank, in the anterior axillary line, a prominent nodular mass was reached, and here the liver margin was nearly seven centimetres below the costal margin. The mass felt about the size of a walnut, was prominent, not umbilicated. No other masses could be felt, but the edge of the liver in the parasternal line was somewhat irregular.

Remarks.—This illustrates a group of cases of obstructive jaundice the precise cause of which is often difficult to determine. The persistent icterus and the loss of weight suggest a new growth, but whether in the stomach, the pancreas, or the liver itself is almost impossible to say. A test breakfast shows free hydrochloric acid, and she has not had much vomiting since admission to hospital. The stools are grayish yellow, not fatty and not suggestive of pancreatic disease. The nodular body at the right border is the main objective point in the local examination, and the question discussed between Dr. Thayer and myself before the class has been whether this is a secondary nodular growth or the projecting end of a firm, hard, cancerous gall bladder. To my touch it rather resembles the former, feeling as though the finger could be passed all around the liver tissue at its base. Supposing it to be secondary cancer of the liver, the organ is not nearly so large as is common in this condition in the space of five or six months. On the other hand, in primary cancer of the gall passages the liver is often not much enlarged, and the jaundice, as in this case, is intense from the outset. A point in favor of this view is the absence of evident signs of disease of the stomach, pancreas, or intestines.

Patient died November 16, 1892. The above comments were written before the patient's death. The autopsy showed a primary carcinoma of the gall bladder, the end of which was the nodular body which we had been able to feel so definitely on palpation. The walls of the organ were greatly thickened, and it contained nearly one hundred small gallstones. There was great induration and thickening about the common bile duct, the head of the pancreas, and in the gastro-hepatic omentum. The common duct passed through this indurated tissue and was almost occluded. The liver weighed only fifteen hundred grammes and presented numerous medium-sized cancerous nodules throughout its substance.

CASE XLII. *Cancer of the Gall Bladder; Jaundice; Progressive Emaciation.*—E. S., aged fifty-four years, admitted to Ward G on January 25, 1893, complaining of pain in the abdomen and soreness in the back. There is nothing of any moment in the family history. She has been married; has had six children; four miscarriages. She has never had uterine trouble; no serious illness until the present attack.

More than a year ago she had pains in the back, sometimes quite severe, and accompanied with high-colored urine. After several of these attacks she had passed small calculi in the urine. She has had none of these attacks and has not passed a stone for about a year. She has been failing in health for the past few months, has had indigestion, belching, and occasional attacks of vomiting, and has lost a good deal in weight. About five weeks ago she noticed change of color in the skin and that she was getting yellow, and for about the same time she has had a dull aching pain on the right side of the abdomen. The urine has been high-colored, and the stools, which formerly were very dark, were light-gray in color.

The patient is a medium-sized woman; face thin, but the body and limbs still well nourished. There is moderate jaundice.

Abdomen full; panniculus well retained. On palpation, it is soft, nowhere painful except at a point about five centimetres below the costal margin in the nipple line. Here there is a firm mass which extends to the left to within six centimetres of the umbilicus, and at this border the fingers can be placed directly beneath it. Below it reaches to the transverse nave line, and is here rounded, and the fingers can not be placed so well beneath it as to the left. To the right the margins are not very clearly defined, but it extends nearly to the tip of the tenth rib. Above, it can not be separated from the liver margin. It feels like a rounded mass, larger than a lemon, is extremely resistant, hard, and, though it has the situation of the gall bladder, it scarcely conveys the impression of the rounded, pear-shaped outline of that organ. The right kidney can not be felt. The liver dullness is not present in the midsternal line, just three centimetres and a half in the parasternal and five centimetres in the nipple line. The mass above described, though directly continuous with the liver, presents a flat tympany on percussion. Deep pressure from behind in the right flank presses the tumor mass forward.

The spleen is not enlarged, stomach not dilated, and the pelvis is clear. The urine is very dark in color, 1·016, pale; bile pigments present; no sugar; a few granular casts. The stools are clay-colored and very offensive. Repeated examinations showed no essential change in the condition of the tumor mass. The jaundice became very much more intense, though the general symptoms were somewhat ameliorated. She took her food better, and had much less pain.

The case was regarded as tumor of the gall bladder associated with gallstones, and probably malignant disease. The patient's condition was so satisfactory that it was thought advisable to have an exploratory operation to determine if anything could be done.

February 8th.—This morning Dr. Halsted made an exploratory operation. The mass above described was in the situation already referred to—between the transverse colon and the under surface of the liver, to which it was firmly attached. The adhesions to the colon were so tight that it was not thought advisable to attempt to separate them. The tumor mass was firm solid, and grayish white in color, passed beneath the surface of the liver, and occupied the position of the gall bladder. The liver itself was not enlarged, but the edge could readily be felt about six centimetres above the lower border of the tumor mass.

The jaundice persisted; she got progressively emaciated; the wound healed. Her friends took her home on March 2d, where she subsequently died.

Carcinoma of the gall bladder is not very easy to recognize, but there are certain suggestive features in suspected cases. The disease is most common in women—two thirds of the cases collected by Musser. In seven eighths of the cases the cancer has been associated with gallstones, so that a history of colic or of previous jaundice should be sought for. Rapid emaciation, with or without jaundice, and the development of a cachexia within three or four months, speak for cancer; simple hydrops vesicæ may persist for months without impairment of the general health. Chills and fever are, as a rule, against neoplasm. So long as the disease is confined to the gall bladder jaundice is not present, but when it extends to the common duct the icterus is intense and persistent. Ascites may be caused by the propagation of the disease to the peritonæum by pressure of secondary masses on the vena portæ, by extension to the gastro-hepatic omentum, as in Case XLI, and occasionally is due to thrombosis of the portal veins.

The local features are variable and uncertain. In the cases I have narrated the walls of the gall bladder were infiltrated, but the cancer may be at the outlet, causing obstruction with great dilatation and a tumor resembling in all respects that produced by any other occlusion of the cystic duct. When the fundus is involved the tumor is harder, more resistant, not so movable as in simple hydrops, and the growth may be very rapid. The liver is not usually much enlarged, even when secondary nodules are present. Aspiration of the tumor gives most important indications. A clear mucoid fluid favors gallstones; turbid, albuminous contents suggest neoplasm, as does also blood or a blood-stained fluid. Fragments of the new growth may be found in the material aspirated. Pure bile is rather in favor of gallstones, and indicates that the cystic duct is not involved.

But taking all the circumstances, general and local, into consideration, you may not be able to reach a conclusion, in which case remember that the hazard of an exploratory operation is slight, and that by far the most frequent cause of tumor in the region of the gall bladder is cholelithiasis.

Original Communications.

ON TUBERCULAR AND SUPPURATIVE PERITONITIS.*

By CARL BECK, M. D.,
NEW YORK.

It is only within a few years that surgery has become a rival of internal medicine in the field of the different forms of peritonitis—just as the kidney was regarded to be the domain of internal medicine only until Gustav Simon, by performing the first successful nephrectomy, showed this to be an error—while before treatment of the different forms of peritonitis seemed forever to be condemned to consist of opium or calomel and the ice bag or the flaxseed poultice.

It is a characteristic sign of our period that now the physician and the surgeon are in entire accord in these cases, and are mutually dependent one on the other.

The first step in that direction was undertaken when in this country the indications for and the limits of the operation for appendicitis were outlined. The gratifying results which are obtained in this affection have shown that this direction was the right one.

But not alone this—they encouraged surgeons to approach the surgical treatment of peritonitis, heretofore a *noli me tangere* for the scalpel.

We are not, however, so far advanced as the statistics of Stühlen show,* where in seventy-eight cases of suppurative peritonitis fifty recoveries are reported.

These apparently splendid results have to be taken *cum grano salis.* There can be no doubt that the author knows of fifty successful cases, but he did not know of many hundreds of fatal cases besides the twenty-eight which he published. It is quite natural that brilliant cases are made known, while the fatal ones, with few exceptions, are passed over; therefore only such statistics can be valued scientifically where *all* the cases of their kind are reported together. So far as my knowledge goes, these postulates in reference to suppurative general peritonitis have been fulfilled only by Miculicz,† Krönlein,‡ and Körte.#

These reports are much less favorable, but if the fact is considered that a cure obtained in even one desperate case, which was formerly thought to be impossible, it is a victory; they certainly present a new phase in the history of surgery.

Statistics, of course, will appear in a different light if the cases are selected, or if such cases are only operated which seem to give a better prognosis than others. But what we demand is that a series of operations inclusive of those without any prospects should be reported as well.

Experience has shown that recovery has taken place even when the surgeon proceeded to the operation without the slightest hope, and where the pulse has not been perceptible, and, *vice versa*, cases ended fatally where the prospects were comparatively good.

As a patient suffering from general suppurative peritonitis has, indeed, nothing to lose, he should be operated upon at all hazards. The permission of the patient can be obtained almost always on account of his great suffering and his cognizance of the unfavorable outcome.

The trouble in getting the permission comes—at least this is my experience—in such cases, from the objection of the attending physicians, and not from the patient or his friends. Consultation and consideration usually consume most valuable time.

Laparotomy always enables us to evacuate the pus from the many pockets and crevices of the abdominal cavity, and to destroy adhesions, which follow the inflammatory process and are generally a great impediment to the thorough evacuation of the pus. But even in the most complicated or extensive cases we would only leave a trifle, thereby at least reducing the quantity of the dangerous germs consid-

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* Read in part before the Surgical Section of the Academy of Medicine, November 13, 1893. Conclusions read *in absentia* before the Eleventh International Medical Congress, Rome, March 30, 1894.

* Stühlen. Drainage des Peritonäum bei Peritonitis. *Strassburger Klinik*, 1890.

† Miculicz, one recovery among fourteen cases. (Paper read at the Eighth Congress of the German Surgical Society at Berlin.)

‡ Krönlein, two recoveries among seven cases.

Körte, *Chirurgische Mittheilungen von Bruns*, 1890, Bd. vi. W. Körte, *Archiv für klinische Chirurgie*, Heft 3, Jahrgang 1892.

erably. Furthermore, the intra-abdominal pressure will be necessarily lessened to a great extent, so that respiration may become free at once, and, again, a perforated organ eventually may be occluded or necrotic tissue (gangrenous appendix, for instance) may be removed.

A thorough disinfection of the abdominal cavity is still a desideratum, but much can be done by extensive drainage with rubber drainage tubes surrounded by iodoform gauze. Strong antiseptics are not borne by the peritonæum on account of its great tendency toward absorption and of its irritability. Weak antiseptic or sterilized solutions are useless in such cases. But even if strong antiseptics, like bichloride, for instance, could be borne, neither the stream of irrigation nor wiping off with sponges could on account of the anatomical condition of the abdomen reach every corner of the cavity. Especially in hernias, where gangrene is suspected, I have employed bichloride of mercury repeatedly, to the terror of many colleagues, but with apparent success, and have never perceived any symptoms, that could be traced to its use.

I employed without fear a 1-to-2,000 solution for disinfecting the intestine, taking the precaution, of course, to occlude the abdominal cavity with sterilized compresses so as to irrigate only the part of the intestine lying outside the abdominal cavity, and to wash immediately after with sterilized water.*

Induced by the great ease with which iodoform powder as well as iodoform mixtures were borne by patients suffering from tubercular peritonitis, I thought of using this ideal drug in general peritonitis also. During the past nine months I have done so by infusing one ounce of a ten-per-cent. mixture of iodoform and glycerin in five cases of general peritonitis and in two other cases where septic pus had escaped into the abdominal cavity during operation.

Though not claiming any specific results for this treatment, which certainly would be useless in acute septic peritonitis, it is remarkable that in five cases in which the chances of recovery on account of their nature were very poor, all with the exception of one, which was operated on at a very late stage, terminated favorably.

It is conceivable that the virulence of the pus may be weakened by the coabsorption of the iodoform. I do not refer to a localized accumulation of pus—that is, to a cavity, no matter how large it may be, which by adhesions is well separated from the *cavum abdominis.* Such extraperitoneal and extremely favorable cases should not be called or treated the same way. I would suggest the same name as for other similar abscesses, characterized by their seclusion—that is, *empyema.*

The most frequent abdominal abscess of this kind is the one depending upon appendicitis.

This should be called "*typhlo-empyema.*"

The best chances for the operation naturally offer at the earliest stage of suppurative and in tubercular peritonitis. It is often difficult to make an exact diagnosis *before laparotomy is done.* I can safely say that in the greater number of cases of extensive appendicitis in which I have been called by the attending physician, it was to operate for "internal obstruction." Any kind of peritonitis, on account of sudden paralysis of the intestines, can produce the symptoms of obstruction—namely, stercoraceous vomiting and retention of fæces and flatus.

On the other hand, peritonitis, caused by perforation, may follow obstruction, so that a definite discrimination is very difficult, if not impossible. The character of the pulse, as some maintain, should show if perforation had occurred already or not. I do not think this to be reliable, as to my surprise I once found a good pulse although, as laparotomy later on showed us, perforation had taken place quite a time previous.

The exploratory needle may be used in doubtful cases, but it very often fails to yield pus, which then is no proof that there is none. If by microscopical or bacteriological examination we could demonstrate the coccus characterizing the infection at the time of the operation, we could be more positive still.

I have repeatedly been able to affirm that, when the axillary and rectal temperature differed for more than two degrees, pus in the peritoneal cavity was always present. In one case of a young married woman, who died from general peritonitis following appendicitis, I found the temperature to be 99° in the axilla and 103·5° in the rectum. Here, as the symptoms of appendicitis were only very slight for the first four days, a prominent surgeon had advised expectant treatment. Suddenly perforation took place, the patient collapsed, and then an operation was declined.

If the intestines are very much distended, the exploratory needle might be fatal, as the hole in the paralyzed intestine may remain open. *All these facts show that laparotomy in all doubtful cases is the lesser risk.*

In the cases of tubercular peritonitis I do not hesitate to confess that I have never been able to make the diagnosis before the laparotomy.

As I understand it, the diagnosis of a tubercular process can only be made by seeing the tubercular nodules or by demonstrating the bacillus of Koch under the microscope. The latter proof can easily be furnished in the sputa of a consumptive, but in tubercular urine, in tuberculosis of joints, glands, or of the peritonæum, it is only exceptionally that such evidence can be secured, and then only if serous or purulent fluid in the abdominal cavity is present, which usually is found only at an advanced stage.

Our aspiratory technique is not so far developed as to entice the bacilli into an exploratory needle; and, if the symptoms are developed beyond any doubt, then local treatment offers hardly any chance.

The cures which I have effected after having performed laparotomy have now, a year and a half after the operation, remained perfect. How this was achieved I fail to understand, but nevertheless it is a fact. If this is only due to the exposure of the abdominal organs to the atmosphere, as is probable, it seems to me that the repeated infusion of an iodoform mixture is a great help and will make the cure more permanent.

The idea of inflating air was quite obvious regarding the theory of the influence of the atmosphere, but the difficulty of diagnosis will always be the weak point for its indication. The iodoform infusion on the other hand will be useful in doubtful cases, be it for exudatory processes demanding absorption or for its specific antitubercular effect.

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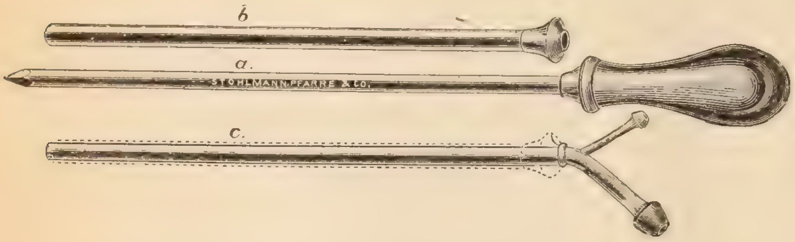
* Compare Resection of the Intestine in Gangrenous Hernia, by Carl Beck. *Medical Record,* April 8, 1893.

I generally infused one ounce of a ten-per-cent. mixture of iodoform and glycerin.

Iodoform. subt. pulveris	50	parts.
Mucil. gummi arab	23	"
Glycerin	83	"
Aq. destil	q. s. ad 500	"

This was done in intervals of one week, altogether between three and eight times. No after-effect ever followed. Generally I used my own irrigation trocar, which I have devised for the treatment especially of tubercular abscesses.

The difference of its construction from other trocars consists of the fact that we can introduce another cannula after the stilette has been withdrawn. This second cannula presents a double-barreled tube. Through the small tube, which can be brought into connection with an irrigator, a sterilized liquid can be infused. Through the large tube, solid particles, which generally have to be expected in the pus, can be washed out. Afterward, through the large tube, iodoform and glycerin or oil can be infused either by an irrigator or by a piston syringe. The advantage I claim for this instrument is that the force of the irrigation will cause solid fragments to dislodge and take them away with the recurrent flow. At the same time the force of the water can easily regulated.



Patients who had had opium administered before the operation seemed to stand the laparotomy better, as the peristalsis was suppressed, thereby favoring adhesions.

As in all other inflammatory processes every surgeon is looking for immobilization as a *conditio sine qua non*, and he should look out for this "splint principle" in the abdomen also. Patients who have had calomel given to them are generally much weaker and seem to have poorer chances for recovery. They especially require stimulants before the operation (camphor, or preferably injections of hot wine or cognac into the rectum). If the patient's condition will allow it, the stomach should be washed out before the operation.

Ether anæsthesia was only induced superficially and only at the beginning, as the pulse was generally very weak.

It is less cruel to bother the patient and save his life than to give him the so-called benefit of a full anæsthesia and kill him under the pretext of humanity. If necessary, the operation should be done under a simple cocaine anæsthesia.

In such cases where marked swelling at the right iliac fossa was present I incised there. The best view I generally have had by making a vertical incision at least four inches in length in a line uniting the anterior axillary line with the spina anterior superior ossis ilii. Whenever this was not satisfactory, I added a cross incision (T-shaped) toward the lumbar region, rectangular to the longitudinal one. Otherwise I prefer to open the abdomen through the linea alba.

Here a large, bloodless, and quick incision can be made. Then with hot sterilized water the pus is evacuated.

Wherever small cavities were formed, from adhesions, drainage-tubes, surrounded by iodoform gauze, were introduced—once seven in number, all discharging through the abdominal opening.

Fibrinous exudations were always wiped off with sterilized gauze, except when they extended over too large a portion of the intestine so that bleeding was excessive or too much time wasted. When the seat of a perforation is found it should be pulled outside, and by separating it from the abdominal cavity by sterilized compresses, it should be irrigated with a 1-to-2,000 bichloride solution and then washed with sterilized water. After this, if the condition of the patient allows it, the perforation (or opening) should be closed. If not—that is, if it should appear that he can not stand any such manipulations, which may require fifteen to twenty minutes' time—that portion of the viscera should remain outside enveloped in iodoform gauze until the patient's condition allows closure and replacement.

In the larger proportion of cases the vermiform appendix causes perforation. Following common surgical principles, it is, of course, advisable to remove the appendix. But if this can only be done at the expense of destroying adhesions, which sometimes may save the patient's life, or, if long searching is necessary, it is better to pack iodoform gauze around this portion, hoping for a later removal or separation.

Iodoform gauze adapts itself tightly to the serosa, and becomes loosened only when suppuration becomes copious. Sometimes I kept it in the abdomen for two weeks. It then (ten per cent.) still contained plenty of iodoform, and cultures showed it to be still sterile.

If there are symptoms of retention afterward, *the finger* must be introduced, not the probe. Hereby valuable information can be obtained, as Case III shows, where I am quite sure that it was only through extensive counter-opening and drainage that I saved the patient's life.

So far, however, as the removal of the appendix is concerned, I do not remove it simply because it may be attached to the tube or ovary by previous inflammatory processes, in case it is of normal appearance.

In one case where I performed oophorectomy, I found a very long and wide appendix of normal appearance. Touching it accidentally, I felt some hard substances in its distal end, which I could easily press out into the cæcum. Assuming that there was enough room as well as contractile elements to let fæcal matter circulate in the appendix, I did not remove it. The patient did not show any symptoms in this direction later on. I have repeatedly felt the appendix in women, but never in a male patient, in whom I often have tried to find it, through the rectum.

But a distinct impression of its condition we are probably never able to get by palpation. In this particular case, if I had tried to palpate the appendix I should, on account of its contents, probably have assumed a pathological condition of its structure.

And, *vice versa*, as one case below shows, even its exposure after laparotomy sometimes may leave a doubt, if there is such a change as would justify its removal.

Histories.

Tuberculosis.—Case I.—Gerdic K. (case presented to the surgical section of the Academy of Medicine, December, 1892, and December, 1893), who at the present writing is fifteen years old, came under my observation in October, 1892.

Since about October, 1891, she had had pain and tenderness in the hypogastric region. Physicians whom she had consulted diagnosticated dyspepsia, chlorosis, endocarditis rheumatica, etc.

In May, 1892, after having swallowed some seeds of a lemon, she claims that the pain suddenly assumed an acute character.

Soon afterward the pains became permanent and localized in the right iliac fossa.

Dr. George W. Rachel, who had her at this time under his charge, reported to me that she had suffered from appendicitis.

Two weeks after the onset of the pains in the right iliac region she was free from fever and was able to go about, but held the body in a slightly bent position. The pain remained the same as before.

Dr. A. H. Stiebeling, who saw her then, discovered a hard, well-defined tumor of the size of a man's fist apparently attached to the os ilii, on account of which he advised surgical interference.

I did not consider a laparotomy justifiable at this time, as I was in doubt about the character of the swelling, which I thought might be the residual product of a perityphlitic process, and which eventually might undergo absorption.

I therefore put the patient in bed and kept her under observation. Hot and cold applications were made, electricity and massage were tried, but all without avail.

Opium gave but temporary relief.

Aspiration of the swelling yielded blood.

After having injected a saturated solution of iodoform-ether into the tumor four times at intervals of five days, the swelling subsided almost entirely. But the pain remained the same as before, so that the patient herself urged me to an operation.

When I performed an exploratory laparotomy, November 3, 1892, I found about three tablespoonfuls of a light serous fluid in the abdominal cavity. The appendix appeared to be normal, and was attached to the right ovary and to the mesocolon.

The extensive adhesions were divided at once.

At the same time a condition was found which previously had been unsuspected—that is, the peritonæum and mesentery were covered with *innumerable* tubercular nodules, varying in size from a pin's head to a pea.

The intestines were apparently untrammeled.

Following the principle which I have adopted in the treatment of tubercular glands and joints, I rubbed the affected portions with iodoform, using about five grammes of the powder.

There was no trouble after the operation, except that, on the fifth day following, an eczema appeared (probably due to iodoform), extending over the entire abdominal wall. The patient could not resist the temptation to scratch, so that the skin sutures partially sloughed. On account of this, union was not perfect till three weeks after.

On the fourteenth, twentieth, and twenty-seventh days after the operation, an ounce of a ten-per-cent. mixture of iodoform-glycerin was injected into the cavum peritonei without causing any trouble.

The pain in the right iliac region disappeared at once, so that I feel quite confident in saying that it was due to the adhesions.

At the present time, nearly a year and a half after the operation, she is perfectly well.

During the winter cod-liver oil was given, while in summer guaiacol was substituted.

Case II.—Mrs. G., twenty-four years of age, married since November, 1892, gives a history of personal tuberculosis.

She had always been well until two weeks after her wedding, when she took sick with chills and sharp pains in the sacral regions. Every afternoon for five weeks following her temperature reached 104·5°.

Dr. Volkenberg, who has been her family physician, diagnosticated peritonitis.

When, on January 11th, I first saw the patient in consultation, I found a temperature of 104·5°, a weak pulse of 140, and a respiration of 31. The abdomen was distended, and immediately above the symphysis pubis quite sensitive to pressure.

Tympanites was but slight.

The legs were drawn up and the thighs flexed upon the abdomen.

Constipation had been present during the first week. There was also disturbance in urinating. Menstruation had been absent for two months.

By a vaginal examination under ether we found the left ovary enlarged to the size of a hen's egg.

The uterus was drawn toward the left side, fluctuation was well developed in the posterior *cul-de-sac*, and the neighboring tissues were indurated.

As there was a history of gonorrhœa, I was quite positive in diagnosticating an ovarian abscess.

A prominent gynæcologist of this city, who kindly examined the patient under anæsthesia with me, concurred in this opinion. Laparotomy on the following day revealed the presence of about a pint of sero-fibrinous fluid in the abdominal cavity and of innumerable miliary tubercles, which studded the peritonæum, mesentery, and intestines.

The left ovary was enlarged, but no evidence of suppuration was found in it or in the tube.

About six grammes of iodoform powder were dusted over the tubercular field, and the abdomen was then closed.

Uninterrupted recovery followed.

The temperature remained normal, with the exception of on the tenth day, when it went up to 104° F.

An explanation for this phenomenon could not be found.

On the thirteenth, twentieth, and twenty-seventh days after the operation, an ounce of a ten-per-cent. mixture of iodoform glycerin was injected into the peritoneal cavity.

Three weeks after the operation the patient was discharged from St. Mark's Hospital, and until to-day has remained well. A slight cough, which was present before the operation, has, curiously enough, disappeared.

CASE III.—Anna R., aged fifteen years, with good family history, had measles, scarlet fever, and diphtheria several years ago. For two months she complained about a dull sensation around the umbilicus, and at the same time her abdomen became distended. The appetite was poor and in the evening an exacerbation of temperature.

On May 4, 1893, on physical examination, I found a thin, slimly-built patient, having a temperature of 102·5°, a pulse of 140, respiration of 23. Ascites was present, so that an exploratory puncture was made. A microscopical examination of the fluid which was drawn shed no light on the nature of the disease. The microscopist suggested cirrhosis of the liver. An exploratory laparotomy revealed the presence of tubercular nodules, the greater number being of the size of a pin's head and extending over the peritonæum, intestines, and mesentery. The other abdominal organs appeared to be free.

Two quarts of a light serous fluid was discharged. About six grammes of iodoform powder were dusted over the tubercular area. The abdominal walls were united with the exception of a space to allow the introduction of a rubber drainage-tube, surrounded by iodoform gauze, which was removed two weeks later, when the serous discharge, which during the first few days was quite copious, stopped entirely.

Recovery has remained perfect.

General Peritonitis. CASE I.—Jacob W., aged seven years, who had always been in good health, was taken sick suddenly with chills and sharp pains in the region of the umbilicus. Vomiting set in a few hours later.

Dr. Sandberg was called, and, as laxatives and enemata were of no avail, he was suspicious of ileus, and advised laparotomy at once.

When I saw the case in consultation (May 17, 1893) I found the following state present:

The patient, well nourished, showed the typical *facies Hippocratica.* The pulse was 131 and weak, temperature 101°, and respiration 32.

The abdomen was tympanitic and very painful to the touch. Resistance or particular tenderness at the right iliac fossa was not present.

After having washed the stomach and the bowel opium was administered, but only slight improvement followed, so that on the following morning I made a large incision at the usual point. About three tablespoonfuls of gray pus, which had an offensive odor, was discharged. When I pulled the intestines out they were seen to be of a dark-red color and loops were attached to each other by fibrinous exudations. I opened a second pus cavity above the right synchondrosis sacro-iliaca. Looking for the vermiform process, I found the cæcum tightly adherent to the right sacro-iliac synchondrosis, from which I was afraid to loosen it.

A cross incision reaching nearly as far as the umbilicus was added, to give a better view. About two yards of intestine, covered with fibrin and purulent exudations, could now be brought into view. With hot sterilized water the abdomen was irrigated and the exudations dissolved off with peroxide of hydrogen.

Being fearful for the fate of the appendix in the depth of the iliac fossa and of the dark-red cæcum, I united the edges of the cross incision only after having dusted iodoform powder over those portions of the intestine which had been covered with exudations.

One loop of about twelve inches in length I kept outside the abdominal cavity by enveloping it in iodoform gauze, thereby being able to pack some gauze around the cæcum down in the fossa. Into the other corner I introduced a few iodoform wicks.

The patient's condition was satisfactory after this, until five days later an elevation of temperature induced me to examine the cavity by introducing my index finger, whereon I discovered a retention of pus in the lumbar region. I therefore made a counter-incision above the crista ilii, introducing a large drainage-tube surrounded by iodoform gauze. Great improvement followed.

Ten days after the operation I replaced the enveloped intestine and at the same time tried in vain to find the appendix.

As the patient made rapid and satisfactory improvement I refrained from further attempts to remove the appendix.

But three weeks after the first operation the patient complained of sharp pains around the bladder; frequent micturition troubled him, and his general condition became impaired. No retention of pus could be detected by introducing a grooved director all around.

Examination through the rectum as well as of the urine revealed nothing particular.

The patient became gradually weaker, had several attacks of syncope each day, and had incontinence of fæces, so that we were fearful lest all our previous proceedings were useless.

After much opposition on the part of the parents of the unfortunate child, I succeeded in pushing my finger toward the bladder and evacuating about two tablespoonfuls of creamy pus, which settled in a cavity extending from the posterior wall of the bladder to the rectum. Forcing my index finger as far as possible toward the opposite side, I incised on its tip so as to enable me to pull through a drainage-tube nearly a foot in length.

Great improvement followed.

Two weeks later I drained this "post-vesical" cavity from the right side only, so that the counter-opening on the left side became obliterated. The patient was allowed to get up contrary to my instructions, and was taken sick again with chills and convulsions.

When I was called I was able to discover retention of pus in the same dependent cavity.

Drainage was again made on the left side, as before, this time having the rubber drain off at the right side first. Two weeks later the canal was packed with iodoform wicks for one week, whereafter recovery became perfect.

The patient now is as strong and healthy as he ever was.

In the right iliac region a very large ventral hernia, undoubtedly due to the weakening of the abdominal walls caused by the long-continued drainage, is present.

Although this does not disturb him, I have suggested an operation, which, under the present circumstances, could not be dangerous.

Here, then, is another case which shows that after a successful laparotomy of this kind a good many dangers may arise from the retention of pus. These dangers can readily be counteracted by prompt and energetic interference.

Great stress must be laid on the introduction of the finger as a diagnostic aid which can never be supplied by a probe.

Case II.—Abraham T., of Brooklyn, aged forty-three years, had always been well until four days ago, when he took sick with chills, nausea, and sharp pains in the right iliac region. Castor oil was administered, but without results.

When I was called in consultation with Dr. Sachs (June 12, 1893) I found the abdomen moderately distended and tender. The pulse was 104 and weak; temperature, 102°, and respiration, 26.

After I had made a T-shaped incision at the usual place, a dark serous fluid discharged.

The intestines, as well as the mesentery, were of a dark-red color.

After having pulled out a loop of the bowels the index finger involuntarily opened an abscess cavity. About four tablespoonfuls of offensive pus were discharged.

As the patient's pulse became so feeble that it could not be felt, the ether was left off and the operation finished without an anæsthetic.

In the depths of the cavity the gangrenous appendix was found and secured by a forceps.

When ligated, it broke off.

All attempts to close the opening by sutures were useless on account of the brittle condition of the tissues.

While this portion of the intestine was temporarily left outside of the cavity enveloped in sterilized gauze the other portion of the intestines was inspected. Fibrinous exudations covered them to the extent of about a yard, so that they were all pulled outside.

The abdominal cavity was then secluded by packing numerous sterilized compresses around the opening and a bichloride solution (1 to 2,000) irrigated for about ten seconds. It was then washed with hot sterilized water for about two minutes, thereby trying to remove fibrinous exudations. A ten-per-cent. mixture of iodoform glycerin was infused after the intestine was replaced. Only three sutures were used to occlude the cross incision, but the long incision was left wide open so as to allow the packing of iodoform gauze around the brittle portion of the cæcum.

Perfect recovery followed.

The gauze was entirely removed on the tenth day.

Case III.—Valentine R., a strong man of thirty-seven years, with a good family record, was always well until December 27, 1893, when he was suddenly taken sick with intense abdominal pains. On the following day frequent vomiting set in, and the abdomen became distended. Laxatives, enemata, and injections with the Seltzer-water siphon were administered without producing a movement of the bowels. With the trial of other useless therapeutics two days were wasted, so that on December 30th, when I first saw the patient, the chances seemed almost hopeless.

The scarcely perceptible pulse was 160, the temperature 99·5°, and the respiration 34.

In the right iliac region well-defined dullness could be demonstrated, indicating a large purulent exudation which was found after incision.

An aspiratory puncture yielded yellow pus.

After caffeine *per os* and hot wine *per rectum* were administered, a large incision under an ether spray was made at the usual place.

About three quarts of pus, having a feculent odor, was discharged.

The gangrenous vermiform process, which was adherent laterally to the cæcum, was removed without any difficulty.

To the original incision a second one, extending toward the umbilicus, was added.

Now three more cavities, formed by adhesions between the intestines, could be detected and were emptied.

Sterilized water was used only for cleaning the abdominal cavity. Wherever fibrinous exudations had been present, they were wiped off with sponges dipped into peroxide of hydrogen.

That portion to which the appendix had been attached was rubbed with iodoform powder.

Then one ounce of iodoform glycerin was infused into the abdomen, the cavities as well as the smaller edges were drained with iodoform wicks, and the pocket adjoining the cæcum was packed with iodoform gauze. The original incision was kept open while the cross incision was united firmly.

The patient was stimulated after the operation, which fortunately had lasted only twenty-two minutes, and after four hours the pulse became distinctly perceptible. Slow but uninterrupted recovery followed.

The last tampons were removed eighteen days after the operation. No evidences of ventral hernia have as yet appeared.

Case IV.—Mrs. Rosa F., twenty-six years of age, had always been well until shortly after being married she showed the symptoms of pyosalpinx.

A prominent gynæcologist performed laparotomy successfully in the summer of 1891.

Union had taken place two months after the operation by second intention. For several months the patient had been doing well.

Then she became more and more constipated and her stomach was repeatedly so much distended that respiration was impaired.

On August 17, 1893, after having been constipated for five days, intense abdominal pains and repeated vomiting set in. The patient herself diagnosticated coprostasis and tried her own therapy, consisting of castor oil and hot poultices for twenty-four hours. On August 19th Dr. Talmey found the symptoms of ileus, which he pronounced to be due to constringent bands, the consequence of the inflammatory process following the removal of the ovary. As irrigations of stomach and rectum were of no avail, laparotomy was performed August 20th at the Post-graduate Hospital.

The emaciated and weak patient had a comparatively good pulse of 120, a temperature of 103°, and a respiration of 24. Tympanites was present. Vomiting was almost constant.

A long incision in the linea alba exposed the incarcerated portion at once. After having loosened a few thin adhesions, about a quart of a green sero-fibrinous fluid was discharged.

Above the right synchondrosis sacro-iliaca a bundle of intestinal loops, belonging to the small gut, was discovered.

They were tightly attached to each other by fibrous adhesions and appeared like an M, so that the intestine was obstructed in four portions.

On its left side the intestine was attached to the stump of the left tube, where the oophorectomy had been performed previously. On its right side it was adherent to the vermiform process, which, being of unusual length (five inches), was of normal appearance; I then loosened it from its adhesions, which was possible only after resection of a considerable portion of mesentery adhering to it.

When the bands between the intestines were loosened three perforations appeared. A fourth occurred when I tried perhaps too forcibly to separate the attachments.

Fæcal matter was present in the pelvis, which was quite small. The perforations, after having been cleaned with bichloride sponges, were trimmed and adjusted. Czerny's sutures with thin iodoform silk were applied, and the serosa was rubbed with iodoform powder and covered with small strips of iodoform gauze.

One ounce of iodoform glycerin was then infused.

Through the abdominal wall, which was united so far as to allow the introduction of my hand, iodoform gauze was freely applied.

Uninterrupted recovery without elevation of temperature followed.

The gauze was removed partially on the third, and entirely on the eleventh day.

This is another case showing the great danger of the formation of adhesions after laparotomy. Only six months before this I had a similar (fatal) case (Dr. Dorfmann) where two years after oophorectomy in a patient twenty-two years old constriction of the intestine, under exactly the same circumstances, had resulted. Perforation had not, however, occurred. (Iodoform was not used in this case.)

I know of about half a dozen similar cases, and therefore lay great stress upon the necessity of massage treatment after laparotomy, especially if inflammatory or even suppurative processes have followed.

A very cheap and practical way to carry this out and induce peristalsis is the frequent use of a cannon ball, to be rolled around the abdomen every morning for five to ten minutes.

Case V.—Fred D., aged six years (tubercular family history), had scarlet fever four years ago; was always well until, on November 9th, he suddenly took sick with sharp pains around the sixth and seventh ribs at the right anterior axillary line. Vomiting was present. Obstruction was successfully removed by the administration of calomel.

The attending physician was in doubt about the character of the disease, until six days after its onset the pain became permanent at the right iliac region, associated with well marked dullness. Tympanites became more developed and the patient showed signs of collapse.

When I saw the patient for the first time the pulse could hardly be felt, and was so rapid that counting was impossible. The temperature was 99° in the mouth and 102° in the rectum. The respiration was 30. Vomiting during the last twenty-four hours had been noticed but five times. An incision at the usual site was made without delay.

A similar condition was found as in Case III, except that no single cavities were noticed besides the large one around the appendix.

Ether had been given for a few minutes when cyanosis appeared, so that I finished the operation, as in Case III, without giving more anæsthetic. The patient bore this without any sign of excitement. Great improvement followed.

An hour after the operation the pulse was weak and frequent, but could easily be perceived. Vomiting stopped entirely, but on the following day he succumbed in collapse.

Case VI.—Miss Carrie R., aged twenty-six years, suffering from pyosalpinx (gonorrhœa), was operated at the Post-graduate Hospital September 24, 1893.

In loosening the adhesions from the tumor, which was of the size of a new-born child's head, it happened in spite of all the precautions taken before that the sac burst and a considerable amount of yellow, badly smelling pus escaped into the peritoneal cavity. Cultures afterward showed streptococci.

A piece of the mesentery as large as an adult's hand was so tightly attached to the sac that I had to remove it with the sac after having ligated it with iodoform silk. The appendix, normal in appearance, was adherent too, but could be separated without any difficulty.

An ounce of iodoform glycerin was infused and the stump then surrounded by iodoform gauze, which was removed four days after. The temperature was normal on the following day and recovery was perfect three weeks afterward.

Since this article was written I have operated in two other cases of general peritonitis. In one case, that of a child, where the peritonitis was due to trauma, considerable improvement followed the operation. The patient died on the third day.

In the other case perfect recovery was obtained.

Mrs. W., twenty-nine years of age, mother of two healthy children, was taken sick with high fever, frequent vomiting, and pain in the right iliac region. Soon after the whole abdomen swelled. When I saw her in consultation with Dr. M. P. Jacobi at St. Mark's Hospital, I found the abdomen so much distended that localization was impossible. The pulse was 140 and weak, the temperature 101°, and the respiration 48. After having opened the abdominal cavity, general peritonitis was found. Fibrinous exudations were discovered to a great extent, and especially in the vicinity of the appendix. They were all wiped off. As the appendix itself only looked hyperæmic, I was in doubt if it was the source of the peritonitis, but, as I found no other, I removed it. It was only then, on splitting it open, that two gangrenous portions could be detected.

The respiration went down to 30 immediately after the operation, and the gauze was removed on the ninth day without any difficulty.

37 East Thirty-first Street.

A PORTABLE PERIMETER.

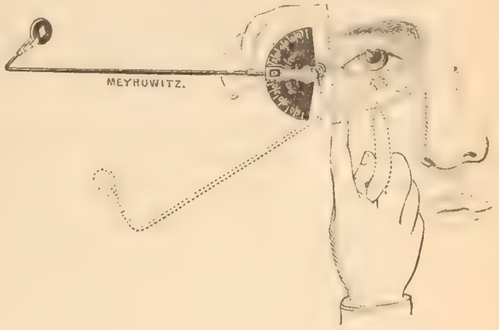
By CHARLES L. DANA, M. D.

So far as I know, there is no perimeter which is easily portable, or which can therefore be used on patients who are ill in bed. Schweigger's instrument is altogether too large and heavy, and is not convenient for bedside use. I have devised an instrument which seems to supply fairly well the need for a portable perimeter. It can be easily and quickly used, and its records, while not perfectly exact, are sufficiently so for ordinary clinical use.

The instrument consists of a handle, slightly curved, to the end of which is attached at right angles a semicircular disk, on which degrees are marked. In the center of the disk is a movable rod six inches long, at the end of which is a clip in which test cards of different colors are placed. At the end of the handle, just beneath the attachment of the rod, is a slightly elevated square surface. The eye not tested being covered, the rod is fixed at the zero mark on the disk and the instrument held so that the elevated knob referred to rests on the lower edge of the orbit. The patient looks directly at the examiner, who places himself so that the patient's line of vision falls along the rod, the disk, and the examiner's eye. The rod is then moved laterally until the test card passes out of the field of vision. The figure is noted and the test repeated, bringing the card from without the field of vision inward. (See the cut.)

The horizontal field is thus obtained. By placing the instrument on the outer margin of the orbit, the vertical field can be measured; and an oblique measurement can also be got if necessary. The rod can be removed and thrust in a hole in the handle; the cards are carried in a small clip, and the whole instrument can be easily carried in the pocket.

The instrument and its method of use are very simple, but not easy to describe. Its only defect is that it registers a few degrees too high unless care is taken.



Of course it does not take the place of the standard perimeters, but I have found it of great practical service in routine office examinations and in hospital and consulting work. The importance of carefully studying the visual and color fields in hysterical and neurasthenic states and in organic brain disease is now acknowledged to be very great. Hence, I hope that this instrument may prove of value.

It is made for me by Mr. E. B. Meyrowitz, of this city, who assures me that its price will be greatly less than that of ordinary perimeters.

A CASE OF SUCCESSFUL SÄNGER CÆSAREAN OPERATION.*

By THOMAS A. DUNDAS, M. D.,

ELMIRA, N. Y.

Gentlemen: I have the honor to report to you to-day the following successful case of the Sänger Cæsarean operation, both as to mother and babe. So far as I am able to discover, the mother is the smallest woman in stature ever delivered of a living child in this way:

Mrs. A. M. P., Elmira, N. Y., a hunchback dwarf, thirty-eight inches and a half tall, aged twenty-five years, primipara, weight a little over sixty pounds, deformed in her hands and feet, or what is commonly called double-jointed.

The conjugate pelvic diameter is an inch and a half, the vagina small and guarded by a very tough hymen, its opening admitting two fingers when forcibly distended, causing much pain. The abduction of the thighs is of an exceedingly limited degree—in fact, much like an ankylosed joint. She walks about the house with a peculiar rolling, waddling gait; on the street she either propels or is pushed on a tricycle.

I was consulted at the seventh month of pregnancy, and after a careful examination decided that in her case delivery by the natural channel would be an impossibility even after craniotomy.

Dr. Frank W. Ross afterward saw the woman with me, and confirmed the opinion already formed, that a Cæsarean section would give her the only chance of life.

The operation, with all its attendant dangers, I explained to herself and husband. She asked if I had ever seen it, and I frankly said no, but thought I could perform it and save both herself and child. She gave her consent, and never afterward wavered for an instant, and expressed the most implicit confidence that I would pull her through. In this respect she was a model patient.

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* From a paper read before the Medical Society of the County of Chemung, N. Y., February 20, 1894, on Craniotomy, Symphysiotomy, and Cæsarean Section.

Her time being up, after trivial pains of two days' duration, with moderate dilatation of the os uteri, the operation was performed by me December 21, 1893. Valuable aid was given by Dr. Frank W. Ross, Dr. W. C. Wey, Dr. Jonas Jacobs, and Dr. C. W. M. Brown.

The bowels were thoroughly evacuated, urine was drawn, the body was bathed, and an aseptic vaginal douche was given. Abdomen was scrubbed, then treated with a bichloride wash (1 to 1,000), then sponged with ether. The hands of the operator and assistants were scrubbed, then placed in a solution of permanganate of potassium, followed with a solution of oxalic acid, then rinsed in a bichloride solution. The instruments were all sterilized, as were the sponges, followed by immersion in aseptic solutions. The sponges used were all new.

The patient was placed upon the table and chloroform adminstered. An incision was made in the median line from two inches above the umbilicus to within two inches of the pubes. There was no adipose tissue, and the abdominal wall was stretched to a degree of thinness that was remarkable.

The peritonæum was then incised, when the uterus loomed up before us like an inflated balloon; as yet there was no hæmorrhage to speak of. The upper end of the incision was extended to near the lower end of the sternum. The intestines were held back by hot flat sponges and the uterus was taken through the abdominal opening, cleansed, and surrounded by a warmed dental rubber dam, the cervix constricted by an elastic tubing tourniquet, and the abdomen drawn upward.

The uterus was enormously distended. I now hastily made an incision through its anterior wall at its middle third. Its walls were so thin that I either incised the membranes or else they ruptured as a result of their freedom from imprisonment. There was a rapid gush of waters. I enlarged the rent and could then see the child *in utero*. It was in a left lateral breech presentation, thighs flexed upon the abdomen, the feet at either side of the head.

I grasped the child by the feet and made a quick delivery; it gave a short cry. I hastily tied and severed the cord and gave the child to the nurses; it was resuscitated without much difficulty.

In opening the uterus, very fortunately I did not encounter the placenta; this was now turned out, followed by considerable hæmorrhage, especially toward its cervical attachments.

The pulse at this time became very weak, and the patient showed marked evidence of shock. Hypodermic injections of brandy, nitroglycerin, and digitalis were given, which caused some revival; also of ergotine into the muscular walls of the uterus, which were flabby; hot sponges were held tightly over the seat of the hæmorrhage. I also aided contraction by grasping the uterus in my hands and giving digital compression. Contraction then took place nicely and bleeding ceased.

The uterine cavity was cleansed and washed with bichloride solution, hot, 1 to 2,000. The uterine incision was then hurriedly but carefully stitched with a double row of stitches—deep sutures not including the mucous coat—then a row of superficial ones; the peritonæum was welted in edge to edge; the stitches were of twisted silk and interrupted.

The woman was now turned on her left side and the abdominal cavity washed out with bichloride solution (1 to 4,000), the cavity sponged dry. The uterus was then cleansed and replaced in its former position.

The abdominal wall was closely sutured, cleansed, dressed with carbolized gauze and absorbent cotton, over which was placed a many-tailed bandage. The woman was now placed in a warmed bed, surrounded by hot-water bottles; she soon came from under the anæsthesia, and retched once or twice, but there was no vomiting.

The pulse for the first twenty-four hours remained at 150; no pain; some urine voided; temperature normal. Liquid diet for twenty days, mostly hot milk, was given. The dressings were changed on the eighth day and stitches removed from abdomen. The wound healed by first intention.

The temperature ranged from 99° to 103·5°, its highest point, which was on the twentieth day. There was considerable discharge *per vaginam*, slimy, dark, and very offensive. Vaginal carbolized douches were given every six hours. On this day I made a vaginal examination. Pushing two fingers forcibly through the opening in the hymen, I discovered a soft mass lodged behind it; removing it piecemeal, it proved to be broken-down putrid tissue, the odor from which was something terrible.

As the placenta had been cleanly removed, I looked upon it as uterine sloughing. About half a pound was thus removed.

The patient now went on to more rapid recovery. Full diet was granted on the twenty-first day. On January 31, 1894, she sat up, dressed. On February 2d she took a few steps, and now went on to complete recovery of her usual health.

There was no lacteal secretion, and the child, which at delivery weighed eleven pounds, has thrived nicely on cow's milk. Now (April 4, 1894) the mother has fully recovered her health and the child is growing well.

A METHOD OF DIFFERENTIAL DIAGNOSIS IN STRICTURE OF THE ŒSOPHAGUS,

*WITH REPORT OF TWO CASES.**

By HOWARD LILIENTHAL, M. D.,
ASSISTANT SURGEON TO MOUNT SINAI HOSPITAL.

S. J. P., aged fifty-seven years, an American by birth and a farmer and surveyor by occupation, consulted me on May 8, 1891, regarding a difficulty in keeping down solids and liquids which had been apparently swallowed. He had first become aware of this defect seven years before, when he discovered that he could no longer drink from a brook by lying down and putting his lips to the water. As he expressed it, he had to fill his mouth with the liquid and then, throwing back his head, allow it to run down his throat, thus drinking by stages "like the chickens." Later he found that when he lowered his head, as in stooping to pick up a fallen object, fluid would regurgitate together with solid masses of food thought to have been swallowed hours before.

The patient knew of nothing in his personal or family history which could throw light on the case. He said he had not had syphilis, nor did he remember any unusual irritation or injury to his alimentary tract.

For several years he had been treated by various medical men without improvement, and, as far as he knew, without a diagnosis. Some weeks before I saw him he came to New York, and was in the hands of a specialist, who said that the difficulty was reflex in character, and who accordingly repeatedly cauterized the mucous membrane of patient's nasal passages. There was no improvement.

On examination, I found the man to be superficially normal.

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* Read before the Section in General Surgery of the New York Academy of Medicine, February 27, 1894.

He was about six feet in height, and was rather spare and wiry. Although one could not call him emaciated, he informed me that he had lost thirty or forty pounds in weight.

Physical examination was negative, care being especially taken in palpation of the abdomen.

I now requested the man to swallow a glass of water, which he did apparently with ease. He then bent forward until his head was about two feet from the floor, when most of the water ran out of his mouth. There was also some mucus and saliva.

My conclusion was that there existed either a stricture of the gullet with dilatation above, or that there was a diverticulum.

Auscultation during swallowing revealed nothing.

The attempt to pass a medium-sized whalebone œsophageal bougie failed, and a much smaller instrument was arrested at the same point, nine inches and a quarter from the front teeth.

The following day, after a half hour's patient work, a filiform urethral guide passed into the stomach. This I followed by a larger instrument, and so on until a No. 11 French urethral catheter of woven silk was reached. This catheter, though it engaged tightly, was successfully passed. There was no bleeding.

In order to make sure that the case was really one of stricture, and in order to exclude the possibility of diverticulum with a small opening into which my instrument might have passed, and to exclude as well regurgitation from the gastric cavity itself, the following method, which I believe to be original, was employed:

The patient having fasted for six hours, the No. 11 French catheter was again with difficulty introduced. Three ounces of water, very deeply colored with methyl violet, were injected with a hand syringe into the catheter, immediately followed by three ounces of clear water. The catheter was then withdrawn. The patient now drank a glass of water, and in a few moments, at my request, caused its regurgitation by lowering his head. The water returned absolutely unstained. He then drank a glass of slightly stained water, and the stained water returned unchanged in color.

By gradual dilatation with woven urethral instruments passed daily, the stricture widened to No. 15 French. The man's condition and ability to swallow greatly improved. Although there was no evidence of syphilis, I ordered iodide of potassium, in twenty-grain doses, thrice daily.

In less than a week my patient was obliged to return to his home in the northern part of the State. He had learned to put the instruments into his œsophagus, and he took with him a number of olive-tipped bougies of various sizes. Two months later he reported himself by mail as still doing well, and on October 22, 1892, nearly a year and a half after I saw him, he wrote me that, though there was still an obstruction, he could live as he had always lived, could stand long tramps, and could sleep upon the ground as well as ever. Formerly the collection of mucus, saliva, and food in his œsophagus had regurgitated and made it impossible for him to sleep upon the ground—*i. e.*, with his head low. He had regained his weight, and had "never been any better" in his life. A letter, dated February 22, 1894, states that the patient has stopped the iodide, and has for a long time ceased to put the bougies into his gullet. He feels well and can eat, but there is still an obstruction present.

It has been my fortune to try this diagnotic method in another case. An old man in the service of Dr. Manges at Mount Sinai Hospital last summer had an obstruction in swallowing and a constant tendency to vomit. The œsophageal instruments of the hospital could not be passed into the man's stomach. Dr. Manges very kindly gave me the opportunity to make an examination, which was done in his presence. A very fine catheter (No. 8 French, I think), to which a rubber tube had been attached, was passed into the stomach. The obstruction was found to be about fifteen inches from the front teeth. After the injection of the aniline color, the patient, with much spasmodic effort, vomited a little mucus in which were very small splashes of the violet, each splash corresponding, I thought, to an effort at vomiting. Accordingly, a diagnosis of tight stricture near the stomach was made, and, for this and other reasons, gastrostomy was proposed. This the man declined. Shortly afterward he died, and the autopsy revealed cancer of the cardia with tight stricture.

33 East Thirty-first Street, New York.

ABDOMINAL SECTION.

HÆMORRHAGIC DIATHESIS; RECOVERY.

By R. STANSBURY SUTTON, M.D.,
ALLEGHENY, PA.,
SURGEON TO TERRACE BANK HOSPITAL FOR WOMEN;
GYNÆCOLOGIST TO THE ALLEGHENY GENERAL HOSPITAL.

On February 1, 1893, Miss M. presented herself, saying that she had an abdominal tumor. She was twenty-four years old, very anæmic, with a thin, rapid pulse; she had suffered a great deal of pain, and her menstrual attacks were irregular and profuse. A few weeks before this interview she had a tooth extracted, and bled more or less for several days, despite various efforts to arrest the bleeding. She had frequent and alarming attacks of epistaxis; rapid walking was painful, and provoked severe dyspnœa. The object of her interview with me was to know if I thought it was possible to take her tumor out and not kill her. I gave her a doubtful prognosis, at which she was evidently displeased. Her persistency, despite the opinion, led me to give her a permit to the Allegheny General Hospital.

On February 6th, an attack of epistaxis having occurred since she got the permit, A. C. E. mixture was administered by Dr. Corbus; she was in the Trendelenburg posture, with high elevation. With great rapidity I removed two ovarian cysts, one of which was adherent in the pelvis; the posterior surface of the uterus and left wall of the true pelvis were left raw, and the bleeding was persistent. A few hot sponges were packed in tightly, but made little impression upon it. I caught at its middle point a handkerchief, eighteen inches square, of iodoform gauze, with the sponge forceps, and carried the caught point to the bottom of Douglas's *cul-de-sac.* Into the funnel thus made, I thrust handkerchiefs of iodoform gauze until the true pelvis was packed full; the free ends of the handkerchief forming the funnel or bag, were gathered together in the lower angle of the wound. Above these the wound was closed with interrupted sutures, placed four to the inch. Over the scaphoid belly, and particularly over the entrance to the pelvis, close to the pubic symphysis, a large mass of absorbent cotton was placed, and firmly pressed down upon the intestines and intrapelvic packing with a scultitus bandage.

With but little pulse she was put to bed, head downward, on an inclined plane formed of the hair mattress. Trinitrin and brandy were given with the hypodermic syringe; she rallied in a few hours.

Thirty-six hours after the operation a little chloroform was given; I reopened the wound, took out the Mikulicz packing, and reclosed the wound in its entire length this time. During her convalescence she had repeated attacks of epistaxis, which were controlled by plugging the posterior nares. Finally she recovered, and has improved in health.

It is now several months since I have heard of her.

I have occasionally resorted to this method of arresting intrapelvic bleeding. More than once I have left hæmostatic forceps protruding from the lower angle of the wound for forty hours after an operation. In all such cases the patients have recovered.

Where the bleeding has resisted sponges wrung out of very hot water, or the hot water in a stream upon the bleeding surface, I have frequently put in a drain-tube, closed the wound, and resorted to a large cotton compress firmly held down with the Scultetus bandage. Where there is no marked constitutional cause, or predisposition to hæmorrhage, the presence of the drain-tube has at once proved that this method is reliable.

Where a bleeding vessel is so deep in the pelvis that it can only be secured by a catch-forceps, and the latter is not long enough to reach through the wound at its lower angle, a silk ligature should be tied to the forceps and be brought out of the lower angle of the wound. Thirty-six hours later the forceps should be removed; the silk ligature is a reliable guide to its location.

A NEW OPERATION FOR CONGENITAL HERNIA.

By H. T. GOODWIN, M. D.,
LOUISVILLE, KY.,
PASSED ASSISTANT SURGEON, U. S. MARINE HOSPITAL SERVICE.

A little more than a year ago a patient, nearly forty years of age, presented himself to me for an operation for the radical cure of a congenital hernia which descended well into the scrotum, and there formed a tumor about twice the size of a hen's egg. It had grown rapidly during the last three months, but before that had given him no trouble whatever.

This is a common enough history, and the case would not be worth reporting but for the fact that I desire to call attention to the operation I performed—an operation easy of execution, simple, far safer than opening into the sac, and which, so far as I am aware, had never before been done, or if done had never been reported by any surgeon.

I have operated in all about twenty-five times for the radical cure of hernia, including several of the congenital form, and though my results have been very satisfactory in a large percentage of the cases, I have never had one with a recovery apparently more perfect than this. As it is scarcely fair, however, to judge of the merits of any operation by the result obtained in a single case, I shall be glad to hear if other surgeons, who may be sufficiently favorably impressed with the operation to adopt the procedure, obtain equally good results.

The steps of the operation, up to the exposure of the sac, were the same as in ordinary operations. At this point I drew the sac well out, and after carefully pushing back the contents through the abdominal opening, and holding up the sac before the light to make sure that nothing remained in it, I gently grasped the testicle and cord between the fingers and thumb of my left hand, while with my right I caught up the upper surface and put the entire sac on the stretch in the same manner that one would pull laterally on a glove to make it wider. I then gave it into the hands of an assistant to hold in the same manner, and while he kept it on the stretch I took a catgut suture armed with a needle at each end, and commencing at the lower border of the sac put in a row of saddler's sutures, taking care to hug the testicle and cord as closely as consistent with safety. The sutures were continued up sufficiently high to reach just within the internal ring when the parts should be returned to their normal position. With a pair of scissors I followed closely along the line of sutures and cut off the redundant portion—*i. e.*, that part of the sac which had been separated from the testicle and cord by the sutures. Then with another catgut suture I made a whipped stitch over the borders so as to bring the raw edges of the sac into apposition. The pillars of the rings were brought together, leaving an opening only sufficiently large to admit of the safe passage of the cord now contained in the greatly reduced tunica. The subsequent steps were the same as in other operations of the kind.

The patient never had the slightest rise of temperature, and when a week later the dressings were removed the wound was found healed.

The operation was performed in the United States Marine Hospital, Stapleton, Staten Island.

Louisville, Ky., *March 14, 1894.*

A CASE OF
SYPHILIS HÆMORRHAGICA NEONATORUM.

By WILLIAM E. CONROY, M. D.,
SAGINAW, MICH.

I report the following case with considerable minuteness of detail on account of the rarity of this peculiar manifestation of congenital syphilis. Bumstead and Taylor, writing in 1883, state that only sixteen cases were then recorded in literature, adding an account of two more which happened in their own experience. Abner Post, in Keating's *Encyclopædia of Children's Diseases*, says that "Dr. Uraceck has reported (*Deutsch. Med.-Zeit.*) a series of peculiar hæmorrhages of different internal organs. Out of a hundred and thirty-two deaths among children of syphilitic mothers slight hæmorrhages were distinguished in forty-four cases. There were only nineteen cases, however, in which the positive diagnosis of syphilis could be made. Of these children, eighteen came into the world alive, but none lived very long, and ten died within a quarter of an hour."

In my case there can, I think, be no doubt of the diagnosis, though this variety of congenital syphilis has usually occurred, as Post remarks, in families more recently syphilitic. It is also unusual for hæmorrhagic lues to affect the child of an untainted mother, inheriting the disease from the father alone. But the symptoms were unmistakable, resembling those found in no other disease except that rare form of small-pox known as variola pustulosa hæmorrhagica, which, of course, was out of the question. Another strong point was the death of the former child from convulsions accompanied by an eruptive skin disease.

Mrs. H., aged twenty one years, United States. Family history good. Has never been seriously ill. Gave birth in 1892 to a female child which died seven weeks after birth, in convulsions. When a few days old "pimples" broke out on its skin. Has had no miscarriages. Health during the present pregnancy has been excellent. Urine free from albumin and sugar. No œdema of extremities. Admitted to Saginaw Hospital, December 15, 1893. After a perfectly normal labor of about five hours' duration, patient gave birth to a female child at 5 A. M., December 29th. The placenta appeared to be normal. No after complications worthy of record.

The child at birth seemed well developed and vigorous. Skin smooth and free from eruptions. The conjunctival *culs-de-sac* were washed out with Credé's solution. Immediately after being washed and dressed the baby went to sleep and slept until evening, when it was put to the mother's breast (mammary glands large and distended with milk). It refused to nurse, however, and again went to sleep.

December 30th.—Frequent attempts were made to induce the child to suckle, but without success, though examination of the mouth revealed nothing to account for this, the mucous membrane being intact and the frenum of average length. The mother's milk was therefore given with a spoon. About noon the baby became restless, sneezed several times, and during the afternoon and evening cried occasionally. Bowels moved toward evening and the napkins showed that urine had passed, though scantily. Sleep much disturbed during the night, baby very uneasy, and crying much, as if in pain. Bowels moved again before morning.

December 31st.—Baby fidgeted and cried almost constantly this morning. Rectal temperature at 6 A. M., 104°; respirations, 70 per minute. Bowels moved several times; passages greenish, frothy, and offensive. Urine scanty. Temperature at 12 M., 103°; respirations, 58. Several pustules appeared at about noon (fifty-five hours after birth) on the neck, rapidly increasing in number and extending to the face, head, and shoulders. When these pustules were opened or ruptured spontaneously, they immediately filled with dark blood. Six P. M., temperature, 103°. Child slept very little during the night, awakening frequently with sharp cries.

January 1, 1894.—At 2 A. M. about a drachm of dark blood, mixed with a little pus, was discharged from the right ear, after which the child was quieter for some time. At 6 A. M., temperature, 102·4°; respirations, 50. During the day there were hæmorrhages from the nose, vagina, and rectum, also subconjunctival ecchymoses, and bloody urine. Constant and copious discharge of bloody pus from the right ear. At 5 P. M., temperature, 102°. Toward evening the baby vomited about three drachms of dark blood. Very restless during the night. Frequent sharp cries. Bleeding at intervals from all mucous surfaces and into pustules. Left side of head swollen and œdematous.

January 2d.—Condition unchanged. Temperature varies from 101° to 102°. Hæmorrhages continue at intervals, and fresh pustules form, which soon fill with blood. Stools very offensive.

January 3d.—At 10 A. M. the child suffered from a convulsion, becoming rigid and cyanosed, bloody froth issuing from the mouth; temperature, 100·8°. Slighter spasmodic attacks occurred during the day, the hæmorrhages continued, and the child died in convulsion at 11 P. M.

As soon as the character of the disease became apparent, I obtained from the mother the information that her husband had contracted syphilis before their marriage, but had never since then shown any evidence of disease. The man himself afterward told me that about *eight years* previously he had become infected, but that the symptoms had been very slight and evanescent, and that he had considered himself cured, since for seven years he had noticed no evidence of the disease. He is spare and anæmic, but presents no appearance of syphilitic or other dyscrasia.

It is worthy of note that in this case there was not bleeding from the umbilicus, the usual seat of hæmorrhage in the newborn, nor were there mucous plaques about the anus, coryza, or any of the more customary symptoms of congenital syphilis. The case also offers the strongest possible proof of the persistent tenacity with which this disease is apt to lurk in the system, lulling its victim to a false security, only to appear in all its hideousness in the person of his innocent child.

I omitted to state that as soon as the pustular eruption appeared mercurial inunctions were employed, but without the slightest apparent effect.

HYPOCHONDRIA.

By SAMUEL GOLDBERG, M. D.

On February 8, 1893, Mr. A. A., aged thirty years, married three years, no children, native of Russia, carpenter by trade, was brought to my office by his father, who said the patient had become insane about four months previously; had been under treatment all that time with no apparent results, and requested me to take charge of the case. He informed me that the patient had not slept for a week or so, but would walk the floor at night muttering to himself, or, becoming boisterous, would declare that his wife did not love him, and while in this condition he would break the furniture, throw the dishes out of the window, and threaten to commit suicide. He had not eaten for quite a long time, asserting the food was poisoned. On physical examination, I found him anæmic, with the characteristic blank expression of the eyes; he also was constipated (had not had a passage for five days); he had continual headaches and flatulency; he was very feeble; pulse, 101; tongue thickly coated and dry; breath very offensive with the starvation odor, due to his abstinence from food, and stating that he felt heavy in the stomach, as if something was in it. The first time he was brought to my office he complained to me that his family and friends were tired of him, that they wanted to kill him, etc. The rest of the family's history was negative. At his first visit I prescribed:

℞ Emul. ol. ricini, fifty per cent.......... ℥ iij.
Sig.: One dose.

With instructions if this did not act during the day he should be given a rectal injection of warm water and castile soap in the evening. I also prescribed:

℞ Morph. sulph....................... gr. ⅛.
Pil. no. vj.
Sig.: One every half hour till sleep follows.

At noon the following day his father called and stated that after taking five pills the patient fell asleep and slept from 11 P. M. till nine the following morning. The emulsion did not have the desired effect, so he gave him the warm-water injection and obtained the result. I then prescribed:

℞ Potass. brom., }
Sodii brom., } ....āā ʒ ij;
Tinct. gelsem.......................... ʒ j;
Syr. simp.............................. ℥ j;
Aquæ.............................q. s. ℥ iij.
M. Sig.: One drachm four times a day.

On the 15th the patient again called with his father and stated that the headache had left him, but the distressed feeling in the stomach continued. I then prescribed:

℞ Potass brom.	ʒ ij;
Tinct. gelsem.	ʒ j;
Syr. simp.	℥ j;
Aquæ	℥ iij.

M. Sig.: One drachm four times a day.

I also gave him:

℞ Sodii bicarb.	℈ ij;
Pepsin	℈ j;
Pulv. nux. vom., Pulv. ipecac.,	āā gr. j.

M. et div. cap. no. viij.

Sig.: One four times a day.

I ordered him to take no solid foods.

On the 25th he returned. No distressed feeling in the stomach, appetite improved, but neuralgic pains in the head. I again prescribed the bromide of potassium and gelsemium, and also gave him:

℞ Nickel sulph.	gr. ¼.

Pil. no. viij.

Sig.: One every three hours.

On March 2d he reports having passed several restless nights, no pain, appetite not very good. I did not change the treatment.

March 10th.—No pains of any kind, sleeps well, but appetite very poor. I then gave him syr. hypophos. comp. (Fellows) and pepto-mangan. (Gudes), on which I kept him for two months. I discharged him as cured May 15, 1893, and since then he has not been troubled, but attends to his business daily.

On the subject of melancholia Spitzka's work on insanity, page 147, says: The duration of melancholia may comprise weeks, months, or years. The average duration is from three to eight months. The frequency is difficult to determine, as a large number of the patients never reach the asylum, but recover, die, or commit suicide outside its walls. Of 2,297 admissions to the pauper insane asylum for males of New York city, 301, or a little over thirteen per cent., were cases of melancholia. Of 1,193 patients of both sexes admitted to the reception wards of Professor Meynert, not quite six per cent. were melancholiacs. The greater frequency of melancholia with females, which is in part attributed to the influence of prolonged lactation, pregnancy, exhausting discharges, and chloro-anæmia in provoking this psychosis, is illustrated by the statistics of the Budapesth asylum. Here ten per cent. of the male and seventeen per cent. of the female patients suffered from melancholia. Of 146 males received at Feldhof by Krafft-Ebing, 13, or nearly seven per cent., were melancholiacs, while of 121 females, 18, or nearly fifteen per cent., suffered from the same disease.

In the writer's statistics the striking fact is noticeable that melancholia is most frequent in the Teutonic people, the ones who, according to Morselli, also show the highest suicidal ratio; and among these it was found more frequent with those who had immigrated than with those who had been born in this country.

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THE CENTRALIZATION OF SANITARY WORK.

It seems that it is not in the United States alone that the cry goes up for a national sanitary official. In almost the very words that have been used here, Dr. T. G. Nasmyth, the medical officer of health for Fife and Clackmannan, in Scotland, calls for such an official and prophesies that in a few years the State will show its interest in State medicine and public health by the appointment of a cabinet minister to preside over the various central boards in Great Britain and Ireland. This prophecy we find in a presidential address delivered by Dr. Nasmyth before the Fife Medical Association and published in the April number of the *Edinburgh Medical Journal.*

He argues that the whole history of such diseases as smallpox, cholera, yellow fever, and influenza shows their ubiquitous nature, their world-wide distribution, their "epidemic expansiveness"; they are not confined to any one country, far less to one city or village, but are at work all over the world. Consequently individual efforts, even local organized efforts, can do little or nothing to prevent the spread of such diseases; international action should be taken at times—"State must act with State," says Dr. Nasmyth, "and the greater the areas included in their consideration the more hope there is of the repression of epidemic diseases." He reminded his hearers of their daily visits to the bedsides of the sick, telling of the blessings of pure air, pure water, and cleanliness, and saying, in the words of Charles Kingsley, "You, and not 'the visitation of God,' are the cause of epidemics."

What advances have thus far been made in the science of public health, he says, have been due to medical discovery and teaching, and he thinks that all the signs of the times point to advances of still greater importance in the domains of physiology, chemistry, and pathology, so that a nation can not much longer allow investigations and discoveries to be the efforts of private individuals, notwithstanding the fact that at all times there have been found in the medical profession unpaid workers and pioneers to make such efforts.

Assuredly the agitation that has sprung up in favor of more or less centralization of sanitary work, advisory, if not executive, can not be allayed, can not be kept from gathering force as time goes on; it is not members of the medical profession alone who join in it, for all well-instructed citizens, when they have once been brought to see the advantage of concerted action in the fight against preventable disease, are ready to promote it. There is no question of the need of central supervision; the only question is as to the best scheme for carrying it out. Various measures have been proposed in Congress, as our readers are quite aware, but most of them have seemed to be objectionable to a greater or lesser extent. We must, however, repeat what we lately said of the New York Academy of Medicine's latest bill, that it seems feasible in its execution and promising as to its results, provided it receives such amendments as to non-essential matters as we have already pointed out the need of, and as must, we feel convinced, meet with the approval of all who desire really satisfactory legislation.

THE FOUR HUNDREDTH ANNIVERSARY OF THE BIRTH OF PARACELSUS.

In the March number of the *Revue de chirurgie* there is a short sketch of this remarkable man by M. Nicaise, who remarks that the recent anniversary seemed to him a fitting occasion on which to recall the memory of a man who occupied so conspicuous a place in the beginning of the sixteenth century. Paracelsus was a singular mixture, and not a man to be easily appreciated. He had many admirers, but was very severely judged by his contemporaries as well as by those of later days. It was his boast that he had not learned medicine and surgery from books, that he did not follow the teachings of renowned physicians and surgeons. Such study, says M. Nicaise, was not congenial to a man of his temperament; it was too slow. But he had acquired a certain knowledge, owing to his keen intelligence, to his observations, and to his travels.

He rejected all the current doctrines, and sought to found a new one; in fact, he acted like a daring empiric, writing and doing the most extraordinary and, the greater part of the time, incomprehensible things. At the same time, he was a man with ideas far in advance of the age, and he combated and discarded the antiquated theories then in vogue and showed the importance of chemistry; he also brought forward improvements in the preparation of drugs. In his writings, Paracelsus thus alluded to the superstitious spirit of the age: "According to the common people, all diseases not of external or surgical origin are diseases without cause—that is, they are sent from God or the saints. Against these the physician can do nothing, unless he is one of those supposed to be peculiarly endowed to cure such diseases—in other words, a charlatan. These men declare that they are empowered through divine inspiration to cure such diseases, and they treat their patients with holy water, prayers, secret remedies, and other devices in such a manner as to impress them with the belief that they operate by the grace of God." Although Paracelsus thus attacked the charlatans, he was not altogether free from the superstitions of his time, for he held that medicine was a science revealed to some privileged persons, and that only those could restore health to whom the knowledge of an insight into human nature had been given by God. He declared that he had received this knowledge himself and that his medicines were the only good and useful ones.

Paracelsus rejected the doctrine of humors; it was for him only the product of the imagination of the followers of Hippocrates. The names bile, melancholy, phlegm, and blood had but a vague theory for their foundation. He believed that all elements (fire, earth, water, and air) were divided into three parts—salt or balsam, rosin or sulphur, and the spirituous part or gotaronium (mercury). The words salt, sulphur, and mercury did not correspond to any real substances; they were purely imaginary. From all that, says M. Nicaise, it was more difficult to deduce anything than from the theory of humors, and this new doctrine of the three elements Paracelsus had borrowed from Basil Valentin.

With regard to wounds, he rejected the suture, contending that Nature reunited them little by little owing to the natural balsam contained in the body, a balsam which varied in each part; he rejected also the theory of immediate reunion, declaring that secondary union was the one needed. He spurned the use of digestives and suppuratives, and recommended desiccatives and washing the wounds with vinegar of roses; he employed glutinative powders and waters, oils or vulnerary unguents, and afterward plasters. In fractures he did not use splints or cushions, but replaced them with two rings of variable diameter, joined by vertical shafts. In surgery he contented himself with employing topical applications and internal medicines, and condemned the use of caustics and the general use of the cautery, and did not resort to instruments.

Paracelsus was an enthusiast, believing himself called to be a great reformer, aspiring to be the Luther of medicine, but, as he was a man of little education, wanting in patience and perseverance in the study of medicine, in fact, in everything conducive to the realization of a grand purpose, he founded nothing. One can understand, however, says M. Nicaise, that, with such qualities, and even such faults, with his daring and his absolute confidence in himself, he made a strong impression, especially in the epoch in which he lived.

MINOR PARAGRAPHS.

THE ROME CONGRESS.

Accounts have reached us of gross mismanagement of the Eleventh International Medical Congress. A correspondent writes that for the first two days it simply was not managed at all, and everything was in confusion. The obstetrical section, he adds, posted notices of a hundred and twenty-four papers to be gone through with in a single day—in itself an absurd thing to do—and then adjourned early on that day, leaving the papers unread. But something worse than confusion is charged—namely, that the Italians were rude to the Americans and Englishmen present, ostentatiously withdrawing their attention when those who spoke in English had the floor and distracting the attention of others by making noises. The sound of the English language, indeed, seemed to offend them. The next congress is to be held in Russia, where, it is to be expected, English will not be thought offensive.

STRONTIUM BROMIDE IN ACUTE CATARRH OF THE STOMACH.

The *Lyon médical* quotes from the *Tribune médicale* a reference to clinical trials of this salt by Dr. Carselli, of Palermo, in gastric affections, especially acute catarrh, which, it says, show anew the remarkably favorable action of the drug. Carselli uses a syrup made by dissolving thirty grains of strontium bromide in a mixture of a fluidounce of syrup of bitter-orange peel and three fluidounces and a half of distilled lettuce-water. This amount is to be taken daily in three doses, during and after meals. It stops the vomiting and lessens the pain. It is thought to act both directly upon the nervous system and as an antiseptic, arresting fermentation and thereby reducing the flatulent distention that gives rise to the pain.

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

The congress which is to be held in Washington on May 29th, 30th, and 31st and June 1st has every prospect, judging from present appearances, of proving even more satisfactory than any of its predecessors. In the first place, Washington is apt to be much more comfortable early in the summer than early in the autumn, when such meetings have heretofore been held there. Much energy has been displayed by those who are charged with the arrangements, and it is to be expected that the debates will be conducted in a manner best calculated to insure thoroughness and at the same time guard against prosiness. The programme for the general sessions was published in our issue for February 24th. Those of the various constituent societies will, it is to be presumed, be issued soon. There will, we think, be more than the usual attractiveness to the congress this year.

BROWN-SÉQUARD'S AMERICAN JOURNAL.

The *British Medical Journal* makes the erroneous statement that during his residence in New York the late Professor Brown-Séquard founded the *Archives de médecine scientifique et pratique.* The fact is that the journal, title and all, was printed in English, and it was called the *Archives of Medicine.*

ITEMS, ETC.

The D. Hayes Agnew Memorial Committee, organized a year ago to secure a lasting memorial of Dr. Agnew in connection with the University Hospital, Philadelphia, report that subscriptions have been promised of sufficient amount to give reasonable assurance of the speedy and successful carrying out of the project. The plan includes not only the children's ward (for the building of which an associate committee was established and for which it is earnestly laboring), but also an amphitheater and ward class rooms, with wards for men and for women—the whole to be a model in perfection of details and completeness of appliances, and thus a fitting representation of the wonderfully full and complete work of Dr. Agnew. The State Legislature, at its last session, made an appropriation of $80,000 to the University Hospital for building purposes, provided that an equal sum of $80,000 be raised by the friends of the hospital, and paid in cash, available for construction purposes. The managers of the hospital, appreciating the eminent propriety of the movement, have consented to give to the entire wing the honored name of D. Hayes Agnew. Toward the additional $80,000 to be so raised, about $60,000 can now be counted upon as available in cash on or before May 1, 1894, leaving only about $20,000 more to be secured by that time, so that building operations may begin this spring, and the State appropriation be drawn and expended within the two years contemplated in the act. It is to be hoped that, in addition to the building fund, there may also be secured a sum sufficient for the beginning of an endowment. Such a memorial will best attest the affection inspired by Dr. Agnew's life of usefulness and the example of devotion to his profession both as teacher and as practitioner. The grant by the Legislature is a recognition of the work done by the university and its hospital, to which Dr. Agnew gave the best years of his busy life, and the subscription supplementing and securing that appropriation will show how his many friends, patients, and students honor his memory. All those who desire to join in this memorial of a great surgeon and good man can do so by sending their subscriptions to the treasurer, Mr. Eugene Delano, of Messrs. Brown Brothers, at the banking house, southeast corner of Fourth and Chestnut Streets, Philadelphia.

The Death of Dr. Corydon L. Ford, of Ann Arbor, professor of anatomy in the University of Michigan, is announced to have occurred on Saturday, the 14th inst. During his long professional career he was a wonderfully effective and popular teacher of anatomy, of which he was professor in various colleges at different times, sometimes in more than one college at the same time. He was a graduate of the Geneva (N. Y.) Medical College. He was eighty-one years old.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 8 to April 14, 1894:*

So much of Par. 13, S. O. No. 79, A. G. O., as relates to Cleary, Peter J. A., Major and Surgeon, is so amended as to direct him, on being relieved from duty at Fort McPherson, Georgia, to report for duty at Fort Wingate, New Mexico, instead of Fort Custer, Montana, for duty at that post, to relieve Matthews, Washington, Major and Surgeon. Major Matthews, on being so relieved, will repair to Washington city and report in person to the Surgeon General for temporary duty in his office.

Par. 2, S. O. No. 68, A. G. O., is so amended as to direct McVay, Harlan E., First Lieutenant and Assistant Surgeon, on being relieved from duty at San Carlos, Arizona Territory, by Straub, Paul F., First Lieutenant and Assistant Surgeon, to report for duty at Angel Island, California, instead of Fort Huachuca, Arizona Territory.

Rafferty, Ogden, Captain and Assistant Surgeon, is hereby granted leave of absence for one month, with permission to apply for an extension until the 20th of May next.

The following-named officers of the Medical Department will report in person for temporary duty until further orders as follows:

Willcox, Charles, First Lieutenant and Assistant Surgeon, to the commanding officer, Angel Island, California.

Flagg, Charles E. B., First Lieutenant and Assistant Surgeon, to the commanding officer, Alcatraz Island, California.

Society Meetings for the Coming Week:

Monday, *April 23d:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *April 24th:* Texas State Medical Association (first day—Austin); New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo, N. Y., Obstetrical Society; Medical Society of the County of Putnam (quarterly), N. Y.; Hunterdon, N. J., County Medical Society (Flemington); Litchfield, Conn., County Medical Society (semi-annual); Boston Society of Medical Sciences (private).

Wednesday, *April 25th:* Texas State Medical Association (second day); New York Surgical Society; New York Pathological Society; American Microscopical Society of the

City of New York; Metropolitan Medical Society (private), New York; Medical Society of the County of Albany, N. Y.; Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (annual—Pittsfield); Philadelphia County Medical Society.

Thursday, *April 26th:* Medical and Chirurgical Faculty of Maryland (first day—Baltimore); Texas State Medical Association (third day); New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Hartford, Conn., Medical Association (annual); Pathological Society of Philadelphia.

Friday, *April 27th:* Medical and Chirurgical Faculty of Maryland (second day); Yorkville Medical Association (private), New York; New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *April 28th:* Medical and Chirurgical Faculty of Maryland (third day); New York Medical and Surgical Society (private); Worcester, Mass., North District Medical Society (annual—Fitchburg).

Letters to the Editor.

FRACTURED RIB AND DISLOCATED CLAVICLE AS A RESULT OF FITS OF VIOLENT COUGHING.

Quebec, *April 16, 1894.*

To the Editor of the New York Medical Journal:

Sir: In the number of the *New York Medical Journal* for April 7th Dr. Schenck reports a case of fractured rib as a result of a violent fit of coughing. Such cases, while far from frequent, are not so rare as your correspondent seems to think. His communication prompts me to report the following case:

On September 3, 1879, Mrs. J. O'C., a strong, healthy woman, was in labor with her third child. During a severe pain, accompanied by powerful expulsive efforts, she was seized with a violent fit of coughing. She suddenly applied her hand to her right side, and as soon as she could speak she said that something must have broken in her chest, as she heard a crack. On examination, I discovered a fracture of the sixth rib a little in front of the left anterior axillary line.

On Thursday, December 7, 1876, William Q., eighteen years of age, and in the last stage of phthisis pulmonalis, felt, during a violent fit of coughing, severe pain at the inner end of the right clavicle and found a lump there. This tumor disappeared on drawing his arms back, but reappeared at each severe fit of coughing. The lump was formed by the inner extremity of the right clavicle, which was dislocated forward.

M. J. Ahern, M. D.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

Meeting of March 7, 1894.

The President, Dr. Frederick Holme Wiggin, in the Chair.

Cholocystenterostomy with the Murphy Button.—Dr. Charles Clifford Barrows reported such a case. A young woman had been sent to him last August with a diagnosis of anteflexion of the uterus. No flexion had been found, but there had been a hydrops of the gall bladder. On operation, it had been found to be distended with bile, and had contained a large number of gallstones. The ducts and bladder had been carefully examined and it had been supposed that all the stones had been removed, but as an extra precaution a fistula had been made. There had been no fever following the operation. The patient's general condition had improved, but she had suffered from colicky pains from time to time. Sometimes large quantities of greenish bile had been discharged, and at other times the discharge would be perfectly transparent—a mucilaginous fluid, giving a scarcely perceptible biliary reaction. She had finally passed from under observation, and had come under the care of another physician, who, observing the transparent discharge, had thought there was a pancreatic fistula. The patient had been sent back to Dr. Barrows and had again been operated upon. A probe had detected a gallstone, and on operating the second time the stomach had been found adherent to the abdominal wall, the omentum adherent to the gall bladder and under surface of the liver, and the intestines about the gall bladder firmly bound together by adhesions. The various adhesions had been broken down and the gall bladder exposed and examined. It had undergone the usual atrophy. No gallstone had been found in the bladder, but in the common duct, just below the junction of the biliary and cystic duct, had been a stone lying in a pocket in the lower part of the cystic duct and the upper part of the common duct. The stone could be moved backward and forward in the pocket, sometimes occluding the cystic and at others the common duct. This had easily explained the intermittent discharge of bile. The stone had been broken up and removed with a pair of forceps. Examination after removal of the stone had shown that the wall of the common duct was considerably thickened and its caliber interfered with; hence, he had decided that it was safer to make an anastomosis between the intestine and the gall bladder. The adhesions about the duodenum had been so extensive that this part of the bowel could not be used, so a neighboring coil of intestine had been picked up, and by the salt test the proper direction had been ascertained. It had been determined that this portion of the bowel was about two feet from the duodenum. The gall bladder and intestine had been opened, a purse-string suture introduced in each, and the smallest size of Murphy's button applied and locked. The button had come away on the ninth day. The patient had made an uninterrupted recovery, the wound as well as the biliary fistula having healed under one dressing.

The speaker said that the operation with this button was simplicity itself, and there were now enough cases on record to show that the operation was safe as well as easy.

He called attention to the fact that although the patient, prior to the last operation, had had a biliary fistula from which the bile had been freely discharged, she had continued to suffer from the usual colicky pains. These pains had evidently been due to the presence of the calculus in the duct. He therefore advised that in all cases the bladder and ducts be freed from calculi before the button was inserted. This was contrary to the advice of the originator of the method, who made no effort to remove the calculi, assuming that they would find their way into the intestine; but the present case illustrated the wisdom of removing all the calculi.

Dr. J. F. Erdman said that it was very difficult to pick up the duodenum even when there were no adhesions. The easiest way to find the duodenum under these circumstances, judging from his experience in the dissecting room, was to pick up the first portion of the small intestine which appeared to be bound firmly to the posterior abdominal wall, as this was, as a rule, the point of termination of the duodenum and the beginning of the jejunum. Of course, where there were extensive adhesions this would not apply. He had performed on a dog the operation of end-to-end anastomosis, and from the time of beginning the anæsthetic to the completion of sewing up the abdominal wall the operation had taken fifteen minutes.

(*To be concluded.*)

PHILADELPHIA ACADEMY OF SURGERY.

Meeting of March 5, 1894.

The President, Dr. William Hunt, in the Chair.

Left Inguinal Colotomy.—Dr. John H. Packard read a paper in which he said that by some surgical writers, notably the elder Gross, the opinion had been expressed that the making of an artificial anus by opening the colon placed the patient in a condition so distressing that death itself would be preferable. His own experience with these operations warranted him in upholding a very different view. His first case had occurred in 1873, and he had had the advantage of the presence and assistance of Professor Gross and of Dr. Levis. The patient, whose rectum had been occluded by a uterine cancer, had lived in comfort for eight months, and then died from exhaustion due to the advance of the disease. In this instance, and in other cases for many years afterward, he had made the opening in the left loin, thinking the access more ready, and preferring to avoid encroaching upon the peritonæum. There was, however, one great objection to the method, that the point of exit for the fæces was so placed as to be only with difficulty reached by the patient, and to require the assistance of others in attending to it.

For the operation in the left groin, he thought the best rule as to the incision was to make it just as on the right side in appendicitis, an inch and a half from the left anterior superior iliac spine, and at right angles with a line between this process and the umbilicus. With scrupulous asepsis the opening of the peritonæum was made with safety; the operation was one of no more difficulty than that in the loin, and the artificial anus was entirely under the patient's control. The directions given in some of the books for the finding of the bowel seemed to him to be needlessly complex; if the large intestine did not immediately present itself in the wound, a portion of the small intestine would, and must be pushed aside, when the sigmoid flexure, especially if distended, would be seen, and might be recognized by the longitudinal muscular bands. His own opinion was that it was a matter of but little moment whether the bowel was opened at once or after the lapse of several days.

He thought it important that the gut should be well drawn down into the wound until the portion above this point was slightly tense, so as to avoid subsequent prolapse through the artificial anus. Even with this precaution it sometimes happened that the inner wall would pouch out and be a cause of some annoyance.

For suturing the edges of the peritonæum to those of the skin it was well to use black silk, so that these stitches might be readily distinguished from those by which the bowel itself was fastened in the wound; these latter should be of white silk, and should penetrate beyond the muscular coat, but not through the mucous membrane.

It was not always easy to judge how large an opening should be made into the bowel. In a child, or when the wall of the gut was very thin, a small orifice would suffice, and he did not think more than three quarters of an inch was ever necessary. The author then gave short histories of three cases.

Dr. J. M. Barton could speak most favorably of inguinal colotomy. It gave us an opportunity of determining what portion of the bowel was involved and making an opening well above the disease. It also permitted us to explore the glands in the interior if removal of the rectum was contemplated. In regard to opening the bowel, he had preferred to permit it to remain at least four or five hours before opening it; by that time the peritoneal surfaces were adherent. It had been recommended to leave the bowel twenty-four hours and then open it with the Paquelin cautery. This seemed unnecessary. He usually employed scissors, and controlled any bleeding that might occur with hæmostats. He had had no difficulty from prolapse.

Dr. John B. Deaver said it had fallen to his lot to do several colotomies, but only one or two inguinal. His reason for preferring the lumbar method was chiefly that it was an extraperitoneal operation. Another reason was that, if the disease extended, it would take longer to reach the opening in the loin than one in the abdominal wall in front. He was free to confess that he had been largely influenced by the views of Mr. Bryant. The lumbar operation was not by any means difficult. He thought that it was quite as simple as the abdominal operation, and, where there was distention, simpler. In the anterior operation distention increased the difficulty. The anterior wound could probably be looked after better than one in the loin, but it was more difficult to keep a pad in position in the former case.

Dr. T. S. K. Morton said that not many days before he had done an iliac or inguinal colotomy, and a most curious feature of the case had been an apparent transposition of the colon to the right side. On making the incision in the left side the colon had presented. He had had considerable difficulty in locating the descending colon. He had finally traced it to the right inguinal region. The lumbar operation, he thought, would not have been feasible in that case.

There was one point which he thought had not been sufficiently emphasized, and that was the importance of making a spur. This could not be done by suturing the side of the bowel to the abdominal opening. If little pieces of fæces passed the opening and reached the diseased surface, they caused a great deal of pain. He had seen nothing equal to a bar of glass or other material passed through the mesocolon for securing an adequate spur. When the bowel was cut transversely upon this support there were two openings presenting, one above the other, and it was impossible for fæces to pass across. So far as the control of the anterior opening was concerned, in the cases that he had seen it had been almost perfect.

With regard to prolapse, Mr. Allingham had proposed dragging into the wound as much colon as possible and removing the redundant portion; he maintained that this would prevent subsequent prolapse. This method had been condemned by others, and it had been found sufficient to make the upper part of the colon taut before fixing it. The size of the opening, he thought, should be of the entire diameter of the bowel. This gave some sphincter-like action to the end. It had occurred to him that we might employ here Gersung's operation for incontinence of fæces from the anus—namely, rotating the bowel a full circle before suturing it. It had been shown that where incontinence was present an efficient sphincter could be made in this way and one that would control liquid fæces.

Dr. John B. Roberts said that a limited experience with both operations led him to strongly favor the inguinal method.

He felt with Dr. Morton, that the important thing was to obtain the spur. He did not see how that could be easily done without using some form of support and bringing the mesentery out of the wound. He thought it a most important feature. He preferred, where it could be done, to wait a few days for adhesions to take place. In opening the bowel he was inclined to prefer cutting entirely across.

Dr. Packard said with regard to the making of a spur, it had never been necessary in any of his own cases, and he thought it could only exceptionally be of advantage. If the opening made was sufficient, the fæces would escape easily through it, and the lower part of the bowel had been, in his cases, kept quite free from irritation by them. Of course, if a spur was to be made, the bowel must be drawn clear out.

As stated in the report of his cases, there had, in the third especially, been still some tendency to prolapse in spite of the drawing down of the bowel, and he should be glad to know of some other way of preventing it.

He was aware that Allingham advised the complete section of the bowel, but it seemed to him to add to the gravity of the operation without adequate advantage. A properly adjusted pad ought to keep its place without trouble.

The Effects of Erysipelas on Epithelial Cancer.—Dr. James Collins related a case in which, about eighteen months before, a man had called his attention to an ulcer nearly opposite the ear, on his right cheek. This ulcer was an inch and a half in its longest diameter, an inch in the shorter, presenting an oval with irregular edges. The discharge was slightly purulent, tinged with blood. The granulations were soft and bled on the slightest touch.

The man stated that twenty years before there had appeared at this point a small elevation, which had frequently formed a scab, which every ten or twelve days would fall off and then reform; it had given but little trouble and received but little treatment.

Nineteen years before he had been treated for a time with ointments and lotions, and some medicine had been administered without special benefit. He was then assured that this was skin cancer and incurable. This ulcer had gradually increased in size and depth. Some benefit had been derived from a lotion of zinc sulphate and salt, dissolved in water to make a mild astringent solution. The ulceration, however, had continued, giving inconsiderable pain, but much annoyance by its presence. The good man had quietly accepted the situation, and sought only palliation and relief from pain.

About November 12th he had suffered from an attack of erysipelas of the face. This ran no unusual course, spreading rapidly from the tip of the nose over the scalp to the nape of the neck. The efflorescence had been followed by desquamation. The external dressing was of ichthyol and lanolin, which had seemed to give relief and comfort.

As the erysipelas had faded out, granulations of a more normal character had developed, and in about two weeks the ulcer had entirely healed. The cicatrix on March 1st was slightly indurated, but smooth and firm, and presented the appearance of normal cicatricial tissue.

This case was reported without special comment. Dr. Coley, of New York, had written on this subject with considerable interest.

The writer was well aware that a single case from the practice of a surgeon was but of little value, isolated and alone, but hoped that others might add their experience and observation.

Dr. John B. Deaver said that Dr. Collins's report was of great interest. He now had a patient with osteosarcoma to whom he had given the erysipelas toxine, but it seemed to have no effect. Dr. Bull and Dr. Coley told him that it had proved of no value in such cases. Further, they had practically discarded it in carcinoma.

Dr. H. R. Wharton said he had had no personal experience in the treatment of carcinoma or sarcoma with the virus of erysipelas. He had under observation a patient with inoperable carcinoma of the face who had consulted Dr. Bull, and he had advised that this treatment should not be tried. The results in carcinoma had not proved satisfactory, he understood from Dr. Bull, but thought he considered the prospect more promising in cases of sarcoma.

Dr. Orville Horwitz said he had had three cases—two of sarcoma and one of carcinoma—treated by the hypodermic injection of the erysipelas toxine. In the case of carcinoma and in one case of sarcoma there had been no benefit. In the third case, the mass involving the side of the neck had become much softened, and it looked as though some improvement had taken place.

Dr. Penrose said his experience was limited to one case of inoperable carcinoma of the right superior maxilla which had existed some two years. Three or four operations had been done, but the disease had finally got beyond bounds. Last spring this woman had accidentally acquired erysipelas, and had had one of the worst attacks that he had seen, but it had had no effect on the neoplasm. The progress of the growth had been the same as before. The beneficial effect of this antitoxine was limited almost exclusively to the softer forms of sarcoma—to sarcoma of the soft parts.

Vaginal Hysterectomy.—Dr. John B. Deaver, in a paper on this subject, said he was convinced that hysterectomy should not be relegated solely to those who worked in the field of gynæcology, but that it belonged as well to the general surgeon. In support of what he had said he might be privileged to ask the question, Was not the surgeon who met with all forms of surgical complications better prepared to meet such than the limited specialist who had not had a general surgical training? Furthermore, if the general surgeon in the pursuance of his work had kept up his anatomical work, and opportunity had been given him to observe in hospital as well as in private practice the class of cases he proposed to discuss this evening, he thought it would be agreed that a paper on this subject by a general surgeon would not be considered out of place.

The symptoms of carcinoma of the cervix might be so slight at first that the patient would pay no attention to them, but would attribute the sensations experienced to the change of life, at which time cancer in this locality usually made its appearance. From the insidious character of the invasion, considerable involvement would generally have taken place ere the case came to the notice of the attending physician or surgeon. A slight hæmorrhage was noticed, following exertion or coitus, and occurring between the regular menstrual periods. This usually did not alarm the patient until it became a frequent occurrence. It had been compared to the hæmoptysis of early pulmonary consumption, but was unlike it from the fact that there was no active destructive change going on as yet. A leucorrhœal discharge was present, although without the characteristic cancerous odor. In the first stage the general or constitutional manifestations of cancer did not present themselves. Pain, however, was one of the earlier symptoms. There might be disturbance either of the digestive or of the nervous system, or of both.

Following this preliminary stage there was usually a period of latency prior to the second stage, when all the symptoms were present to a marked degree. The hæmorrhages were more frequent and at times were profuse. There was also present a sero-purulent, irritating discharge, with a penetrating, foul odor, and by contact with the internal and external geni talia it gave rise to irritation and pruritus, which often caused as much distress as the primary disease. The pain was severe and radiating in character, and was felt most in the lumbar region. The uterus might be fixed or movable; as the disease progressed the uterus became fixed by extension of the disease to the surrounding pelvic structures. Examination with the speculum was often unsatisfactory, unless ulceration or granulation tissue was present; the finger more readily detected the changed character of the tissue, recognizing neoplasm from its consistence.

The general condition of the patient during the second stage underwent a marked change. The digestion was very much impaired; anorexia, constipation, etc., were present, and gave rise to systemic malnutrition. As a result of this general disturbance, what was known as the "cachectic stage" made its appearance. The skin was dry and rough, and its color was changed to a muddy yellowish-brown tint.

The conditions from which cancerous disease of the cervix was to be distinguished were the following: Lacerated cervix with cervical catarrh, erosion of the cervix, specific ulceration, mucous patches, papillary growths, elytritis, myoma, and sarcoma.

The diagnosis of the cervical carcinoma was in the main easy, as the cases were usually seen after positive ulcerative and other gross changes had taken place. Where there was simply thickening of the mucous lining of the cervix, with infiltration of the walls, and particularly where the cervix had been torn, it became somewhat difficult to distinguish from a long-standing case of cervical catarrh. When, in addition to the above-mentioned conditions, the cervix presented a nodular appearance from occlusion of the cervical glands, the difficulty was increased. This latter condition, however, should not be mistaken for carcinoma, as the nodules were characteristic of malignant infiltration.

If ulceration was present, and the ulcers presented a punched-out, ragged appearance, bleeding freely from the slightest touch, suspicion should be aroused. On the other hand, ulceration consequent upon erosion of the cervical mucous membrane was regular in outline and the surface of the ulcer smooth.

Specific ulceration of the cervix, chancrous and chancroidal, was rarely seen, and bore little or no resemblance to carcinoma, and in connection with the history of the case, age of the patient, etc., should not cloud the diagnosis.

Mucous patches and papillary growths were more likely to be confounded with the disease than the two preceding conditions; these were, however, distinguishable in that they were more numerous and more widely distributed.

The discharge which accompanied elytritis in no way resembled that resulting from carcinoma.

Myoma of the cervix might be confounded with a single carcinomatous nodule, but differed from the latter in the absence of infiltration, inflammation, and adhesion of the overlying mucous membrane.

In incipient carcinoma of the mucous lining of the uterus, before the body had become involved, the only symptoms were the presence of a sero-sanious discharge, not necessarily accompanied by odor, and the general appearance of anæmia with debility and digestive disturbances. Pain might or might not be a feature of the case. These indefinite symptoms, together with the failure to respond to well-directed treatment, and the absence of disease of the uterine annexa should warrant dilatation and curettement for purpose of diagnosis.

In carcinoma of the body of the uterus the presence of a sero-sanious discharge with the characteristic odor, associated with frequent hæmorrhage and enlargement of the fundus, would warrant curetting and a microscopical examination of the particles of tissue removed. This might be done without anæsthesia.

Sarcoma of the uterus was capable of giving rise to symptoms similar in many respects to those of carcinoma. While it was not always possible to distinguish between these affections, they each had symptoms peculiar to themselves.

The symptoms in favor of sarcoma were the presence of a rapidly growing tumor of the uterus appearing rather earlier in life than carcinoma; hæmorrhage, which was more or less constant, and severe pain.

The diagnosis of sarcoma could often be established by a digital examination, when the cervix would be found less patulous than in carcinoma, the tumor presenting the form of a polypoid growth. It might be necessary to dilate the cervix to explore the interior of the uterus, when, if a mass was found, a portion of it might be removed and examined.

As to the probable outcome of a vaginal hysterectomy for carcinoma, it was too early in the history of the operation to draw definite conclusions, but the results thus far had proved that especially early and even later operations had prolonged life. There was no doubt that removal of the uterus for carcinoma offered a longer immunity from return than operations for the same disease in other parts of the body, if done early.

Fatal attacks of uræmia might follow, though it was rare to have eclamptic convulsions.

By extension of the disease the bladder and rectum became involved, and as a result cystitis or vesico-vaginal or recto-vaginal fistula might arise to add to the already deplorable condition of the patient. Peritonitis from extrusion would cause a speedy termination of the case, as would an embolus.

Pregnancy was a dangerous complication, as septicæmia or fatal hæmorrhage was likely to ensue if the case was permitted to go to the full term.

The relations of the ureters were of so much importance in this operation that the writer had thought it worth while to describe their course. They extended from the termination of the pelvis of the kidney to the bladder, passing through the laminæ of the subperitoneal connective tissue. Their average length was about twelve inches. At their commencement they lay about three inches apart, but on nearing the base of the bladder they ran forward and inward and pierced its wall, and at their termination were separated by a distance of about an inch and a quarter.

We might describe them as consisting of three portions—namely, abdominal, pelvic, and vesical. The abdominal portion was in relation posteriorly with the psoas muscle and its fascia, the genito-crural nerve, and the common iliac artery. Anteriorly they were covered by the peritonæum, and on the right side lay partly under the caput coli and ascending colon, and under the descending colon and sigmoid flexure on the left. About the middle of their course they were joined by the ovarian vessels, which crossed them to descend into the pelvis along their outer border. At the brim of the pelvis the right ureter lay just behind the peritonæum, where it could be seen with the ovarian vessels. On the left side, the relations of the ureter to the sigmoid flexure depended entirely upon the length of the meso-sigmoid. Thus in one case the ureter might lie behind the sigmoid vessels, and in another directly behind the intestines. After crossing the psoas muscle it crossed obliquely over the common iliac artery above its bifurcation, dropping into the pelvis at this point.

The pelvic portion ran in front of the sacro-iliac synchondrosis, then upon the obturator internus muscle and its fascia, finally leaving the pelvic wall to join the bladder. It lay at first usually to the inner side of the internal iliac artery, subsequently to the outer side, and was again crossed by the ovarian veins and artery, which left it at an acute angle. It then descended in the lower cellular tissue to the floor of the pelvis in a forward direction, passing directly under the uterine artery, and through the uterine plexus of veins and beneath the base of the broad ligament. Finally it crossed the upper third of the vagina to reach the vesico-vaginal interspace, and pierced the bladder opposite the middle of the vagina.

The vesical portion, about half an inch in length, ran obliquely downward and inward through the coats of the bladder to open on the mucous surface at a distance of about an inch to an inch and a quarter from its fellow, and the same distance from the internal urinary meatus.

The uterine artery left the lateral pelvic wall at a point just above the ischial spine, reached the vaginal wall at the level of the os externum, and then ran upward along the side of the uterus to reach the fundus.

Much depended upon the preparation of the patient for operation. The most careful antisepsis of the vulva and vagina should be carried out. It was the practice of some surgeons to have the hair covering the soft parts removed; the writer did not believe this necessary if this region was thoroughly scrubbed twice a day with some good detersive soap for two or three days prior to the operation. The vagina should be cleansed with soft soap, and then both the external genitals and the vagina irrigated with a 1-to-60 carbolic-acid solution containing an amount of bichloride of mercury to make it equivalent to 1 to 4,000. The bowels should be carefully regulated, and a mild laxative administered for a few days before the operation to thoroughly clean out the lower end of the alimentary canal. If there were present granulations covering the cervix or occupying the uterine canal, or should the cervix be eroded and accompanied by a fœtid discharge, it would be wise at first to curette away the granulation tissue exciting the discharge, and subject the vagina to bichloride irrigations twice or thrice daily, the frequency depending on the character of the discharge.

In the operation of vaginal hysterectomy one of three methods was practiced—the clamp, the ligature, and that by enucleation (Langenback's). There was no doubt that the method by enucleation was the ideal one, and the one that should be adopted when the case was suitable for it.

The enucleation method consisted, first, in liberating the cervix by carrying two elliptical incisions through the vaginal wall in front of and behind the cervix, or by a circular incision carried around the cervix, the dissection being made close to the cervix. This should be the rule whatever method was employed. In the removal of neck tumors in the immediate neighborhood of large vessels, or, in fact, any tumor occupying an important vascular locality, the surgeon followed the practice of dissecting close to the tumor. The second step in the enucleation method was that of making a subperitoneal dissection of the uterus. He thought this should be the operation of choice, in the early cases at least.

Between the clamp and the ligature method there was in his mind no doubt of the superiority of the latter. He granted there were a few cases where the clamp method was probably the better operation, but those constituted the exception. The ligature method of vaginal hysterectomy was as much superior to the clamp as was the dropping of the stump in the supra-vaginal, having tied off the uterine appendages and ligated the uterine arteries, over that of the *serre-nœud.* The ligature was surgical, while the clamp compared to it was unsurgical.

In the selection of any operation, that which would leave the patient the most comfortable, not, of course, exposing her to a single additional risk, should, in his judgment, be the one of choice. He was frequently confronted with the argument, "Why, the clamp method could be done in fifteen minutes and less." In answer to which his reply was, The ligature method could be done in thirty to forty minutes. The question of a few moments longer in doing the operation was of no import, as, if the case was suitable for a hysterectomy, there would be no shock. The loss of blood in the ligature method was no greater than that in the clamp, if done properly, and the security against secondary bleeding was much greater. The ligature method was one that could be made a strictly aseptic one, and maintained so throughout, while in the case of the clamp there was always some suppuration following, thus exposing the peritonæum to infection from without.

The question might arise, Why not close the wound in the vault of the vagina? The wound would close itself. He had observed, and demonstrated after the removal of the uterus, the almost perfect apposition of the cut surfaces; therefore, he had never been able to see the necessity of introducing sutures. If bleeding followed reaction from the anæsthetic, and the wound in the vagina had been closed by sutures, it might be the cause of a subsequent abscess, while in allowing the edges of the wound to appose naturally, and introducing a little packing of iodoform gauze into the vagina, not carrying it into the pelvic cavity, the blood found its way into the vagina and was taken up by the gauze. By the time reactionary or consecutive bleeding, if we saw fit to call it such, would occur, the wound in the vagina would not yet have been sealed off; therefore it found its way out of the pelvis.

In either the ligature or the clamp method, when the cervix was entirely destroyed, thus making it impossible to grasp it with a volsella or pressure forceps to pull the uterus down, his practice was to introduce a tenaculum into the uterus, by which he was able to make slight traction, and thus steady the organ; this allowed him to free the vaginal walls and expose the supra-vaginal portion of the cervix, which he grasped with the volsella, and thus commanded the uterus through the remaining steps of the operation.

The bowels and bladder having been emptied, the patient was anæsthetized and placed in the lithotomy posture, with her limbs held by assistants. A Sims's speculum was introduced and the cervix uteri exposed. The cervix was then grasped either by a volsella or a pressure forceps, the latter being less likely to slip or tear out. Traction was made upon the uterus, drawing it downward and forward to expose its under surface. An incision was carried across the exposed surface to the situation of the internal os, or as far away from the eroded tissue as possible, and with the fingers the posterior wall of the vagina and the areolar tissue were freed from the uterus down to the peritonæum. The forceps holding the uterus was then carried downward, and the incision continued to make it encircle the organ. The structures in advance of the uterus were dissected away in the manner before described, great care being observed to keep close to the body to prevent injury to the bladder; having reached the vesico-uterine folds of the peritonæum, the vagina was thoroughly irrigated. The recto-uterine and vesico-uterine folds of the peritonæum were now broken through, and, if the operator so desired, a small piece of gauze or sponge was introduced to prevent prolapse of the intestine; this he did not believe, however, to be essential. The female blade of the clamp was then introduced along the palmar surface of the finger, which acted as a director. The blade of the clamp was made to hug the lower surface of the broad ligament, and the end of the blade was made to pass beyond its upper limit. The handle was depressed to make the end appear above the upper surface of the ligament, the other blade introduced, and the clamp locked. The opposite side having been treated in the same manner, the attachments were severed and the uterus was removed. Should difficulty be experienced in applying the second clamp, the attachment of the side already clamped might be severed, and the body of the uterus loosened and extracted, when the clamp could be easily applied.

A piece of sponge or gauze was introduced, and the vagina was irrigated; gauze was loosely packed around the clamps to prevent ulceration of the soft parts from pressure, and a light packing placed in the vagina to act as a capillary drain.

The clamps might be removed at the end of the second or third day. In removal of the uterus by the ligature method, the early steps were the same as in the clamp operation. Having freed the uterus from all its surrounding tissues, except the broad ligaments and the peritonæum covering the fundus, the vagina was thoroughly irrigated. The broad ligaments were now to be ligated. An aneurysm needle, curved on the flat and set at right angles to the handle, was threaded with a silk ligature and passed through the base of the right broad ligament a short distance from the cervix; this secured the uterine artery. Successive ligatures were then applied until the entire ligament was tied off. As each ligature was tied the included portion was cut free from the uterus. Having ligated and secured the right ligament, the left was treated in the same manner.

If there was an elongated body, as was often found in uterine carcinoma, great difficulty might be experienced in ligating the entire ligament upon one side without tying off and removing a portion of the ligament of the opposite side. By adopting this course the organ could be pulled down and the remaining ligatures easily applied. As the ligatures were being tied down, the traction of the uterus should be relaxed. The uterus having been freed from its ligamentous attachments, the peritonæum was broken through and the organ removed.

After the uterus had been removed it was the custom of some surgeons to close the opening in the vagina. He did not practice this. The cut surfaces approximated themselves, and further favored drainage, if we simply packed the vagina and did not stitch.

The author then related four cases illustrating his views.

Dr. C. B. **Penrose** said that in the diagnosis of doubtful cases Dr. Deaver had spoken of dilatation and curetting. He had found this unsatisfactory in most cases. We might be obliged to rely on it in cancer of the fundus, but in suspected cancer of the cervix he thought that it was better to cut out a wedge-shaped piece. He had done this in fifteen or twenty instances, and in many of them had recognized cancer in its early stages. With regard to the method of operation, he preferred removal through an abdominal incision in all cases, if necessary making a preliminary incision in the anterior and posterior vaginal fornices in order to be sure that all infiltrated tissue in the vagina was removed. By this method one could more readily deal with any complications that might arise.

Dr. **Deaver** said that he quite agreed with Dr. Penrose that the removal of a portion of the cervix for diagnostic purposes was more reliable than curettement; but this was not applicable in all cases. He should like to hear from Dr. Penrose what was the status of removal of the tubes and ovaries in these cases. He always attempted to remove them because he saw no advantage in leaving them. He should like to know if this lessened the liability to recurrence. The ovaries, however, did not hold the same relation to the uterus that the lymphatic glands did to other structures.

Dr. **Penrose** said he thought that the chief reason that it was desirable to remove the tubes was that in twenty-five to thirty per cent. there was extensive disease of the tubes, not necessarily malignant, however. The ovaries, he thought, in young women might be left in order to preserve the ovarian influence.

Abdominal Hysterectomy in which the Ureter had been Resected and Implanted into the Bladder.—Dr. **Charles B. Penrose** reported this case because, he said, the immediate implantation into the bladder of a ureter, which had been divided during a cœliotomy, was a rare proceeding.

The patient was a white woman, forty years old, who had had a scirrhous cancer of the cervix uteri. The growth had extended as high as the internal os, and infiltrated the left broad ligament in a dense hard mass to a distance of about an inch from the cervix. There had been no involvement of the vagina. There had been no symptoms of obstruction of the ureter.

Cœliotomy had been performed at the Gynecean Hospital in July, 1893. It had been found that the left ureter passed directly through the hard mass in the left broad ligament; and in order to remove completely all diseased tissue it had been necessary to excise about an inch of the ureter—the portion involved in the broad ligament.

After the uterus had been cut away at the vaginal junction, the distal end of the ureter had been ligated with silk, the vagina had been closed, the peritonæum had been sutured over the seat of operation as much as possible, and the proximal portion of the ureter had then been implanted into the body of the bladder. The operation was similar to and had been derived from that used by Dr. Van Hook for uniting a ureter after complete transverse division, by lateral implantation of the proximal into the distal portion (*Jour. of the Am. Med. Assoc.*, March 4, 1893). An incision had been made antero-posteriorly in the body of the bladder somewhat less than half an inch in length. A needle armed with fine silk had been passed through the bladder wall from without in, at a point about a third of an inch from the edge of the incision on the right, and brought out through the incision. It had then been passed through the right wall of the ureter close to the extremity, carried back through the incision in the bladder, and passed through the bladder wall from within out, close to its point of entrance. A similar suture had been passed on the left side of the incision in the bladder and through the left side of the wall of the divided ureter. Traction on these sutures had dragged the ureter into the bladder, and when tied they had held it in this position.

The loose peritonæum, which had formed a partial investment to the ureter, had been drawn down and sutured to the peritonæum of the bladder by a continuous silk suture around the line of union of ureter with bladder. The abdomen had been closed without drain. A soft rubber catheter had been introduced through the urethra and was retained for three days. The patient had made an unusually easy recovery.

There had been no symptoms of bladder or renal disturbance. The quantity of urine passed was as follows: Ten ounces in the first twenty-four hours, twenty-six ounces in the second twenty-four hours, twenty-two ounces in the third twenty-four and thirty-eight ounces in the fourth twenty-four hours.

She had left the hospital twenty days after the operation. Her physician had written him in December that she was perfectly well and doing her own housework. He had written again in February—over six months after the operation—that she had been suffering with pain in the right iliac region—perhaps a recurrence of the disease.

She had at no time presented any symptoms whatever of disease of the urinary organs.

Text-books on surgery advised that, in case the ureter was torn or cut across during the removal of an abdominal tumor, the renal end must be brought out through an opening made for this purpose in the loin. And in some instances nephrectomy had been performed for the relief of such an accident.

The clinical and experimental researches of Dr. Van Hook, of Chicago (paper read at the forty-fourth annual meeting of the American Medical Association, June, 1893), a recently reported case of Dr. H. A. Kelly's in which a divided ureter had been immediately united by lateral implantation of the proximal into the distal portion, and the case just reported went to show that the advice of surgical text-books should be modified, and that, if the patient was able to endure a slightly prolonged operation, and the anatomical conditions were suitable, it was better to immediately implant the proximal portion of the ureter into the distal portion or into the bladder.

Conditions Justifying Removal of the Testicle in Radical Operations for Inguinal Hernia; with a Report of Three Successful Cases.—Dr. Thomas S. K. Morton read a paper on this subject, in which he said that he desired emphatically to impress the fact that he was not there to advocate the indiscriminate sacrifice of an organ usually so highly prized as the testicle, but simply to point out certain of the conditions which would appear to him to justify the procedure and to relate three cases in which he had considered it best to resort to it. These cases represented the total number in which he had deemed it prudent to add ablation of the gland to formal procedures for the radical cure of inguinal hernia, for instances were rare in which this course might be considered justifiable, and must become constantly more and more so as radical procedures become perfected.

With the operations proposed by Bassini, Postempski, and Halsted, with their modifications, where the cord was displaced entirely from the inguinal canal, and, in the latter, even removed from the internal ring to an entirely new opening made for the purpose in the muscular structures of the abdominal wall; with these operations, he said, the presence of the cord had almost ceased to be a hindrance to seemingly ideal radical cure. Hence any temptation to sacrifice the testicle vanished and the conditions necessitating or permitting such removal became correspondingly more circumscribed.

Removal of the testicle in operations for inguinal hernia would, therefore, in his estimation, be practically limited to the following conditions:

1. Certain cases of undescended testicle. Here, if the testicle had entered the canal and was degenerated or otherwise diseased, or could not be separated from the sac without endangering its vitality, or where it was manifestly functionless, it might be removed without reluctance. But if it was normal or almost normal in all respects save position, it would be best, if possible, to displace the cord from the canal by one of the modern methods and attempt to bring the organ into the scrotum and there fix it by sutures; or it might be pushed within the abdominal cavity through the internal ring, and there permitted to remain after close suture of the ring.

2. In some rare cases of congenital hernia. Removal here must be very exceptionally called for with so many modern operative resources at hand.

3. In certain cases of chronic or acute disease of the testicle or cord complicating hernia demanding removal of the organ upon its own account.

4. In rare cases in which severe traumatism had occurred to testicle or cord during or before operation. Accidental division of some or all of the vessels of the cord would not necessarily demand excision of the testicle unless other severe complications were present. Wounding or section of the vas deferens likewise might be consistent with retention of the organ. But where the gland had been stripped entirely from all other connections, such injury to its vascular supply would produce so much danger of necrosis that ablation would become imperative.

5. In certain cases where sloughing of the sac or interrupted circulation of the cord or testicle had involved these latter structures in a suppurative or sloughing process.

6. Perhaps occasionally in the very aged, to simplify or shorten the operation, or for some of the before-mentioned conditions of less degree than would justify the procedure in a younger individual.

There were no conditions, of course, except senility, that would excuse the removal of a testicle under circumstances where it was the sole reproductive gland possessed by the individual; even rarer would be the conditions justifying removal of both testicles in double herniæ.

Surgeons must be exceedingly cautious not to interfere with so highly valued a part without either a very clear understanding with the patient before witnesses (and preferably in writing) preliminary to the operation, or else the certainty that the conditions for which the organ was removed would be convincing to others of the necessity for such removal. It was obviously important also for the operator to carefully preserve the specimens for his protection in case of dispute.

One word more of caution. It was not the easiest matter to tie off the testicular cord in such a manner as to leave it absolutely secure against recurring or secondary hæmorrhage after its return to the abdominal cavity; and bleeding from it originated a peculiarly dangerous form of shock quite independent of the amount of blood lost, which often was speedily fatal. Moreover, the bleeding would not be likely to cease spontaneously in the warm and moist peritoneal cavity to which the ligated stump had been returned, and an operation to secure it more firmly (if a diagnosis was made in time) would be a very formidable complication. Hence, excessive care must be exercised in its primary ligation. It should be transfixed and tied off in at least two portions. Silk was the only fit material for this purpose. A good button of tissue should be left above the ligatures, and, to be doubly sure, any apparent vessel ends should be separately ligated upon the end of the stump before it was returned to the cavity. Searing the stump with a cautery below the main ligatures would be equally efficient as the separate ligatures to the vessel ends. If the cord was very large or œdematous it should be ligated in even smaller portions.

Three cases were related illustrating the author's views.

Dr. Joseph H. Packard said he wished simply to refer to one practical point in the treatment of these cases, and that was the use of swimming drawers to hold the dressings in place. It was difficult to apply a bandage that would keep its place perfectly, and he had found this method answer an exceedingly good purpose after various operations in the pelvic region.

Dr. John B. Deaver said that in this connection he should like to state that Banini had reported a year ago five hundred and sixty operations, with fifteen relapses and no deaths. There were only two points which he wished to mention. One was the kangaroo tendon now used by most surgeons. The second was enveloping the entire limb in a plaster-of-Paris bandage. A great deal of the perfect asepsis was due to the latter.

Miscellany.

Resection of the Urethra.—In the *Lyon médical* for March 25th Dr. Étienne Rollet, adjunct professor of the Lyons Faculty of Medicine, relates a case of resection of the whole circumference of a strictured urethra to the extent of six centimetres (about two inches) of its length, in a case complicated with fistulæ and extensive indurations. The author remarks that at present there is not a satisfactory feeling of certainty in regard to the results of urethral resection for the cure of certain strictures due to gonorrhœa, and that this is in consequence of the paucity of the operations that have been performed. Even partial resection, he says, is rejected by the surgeons, and he quotes from a recent text-book on strictures of the urethra by Hamonic the following expressions in condemnation of that operation: "In place of the fibroid tissue of the stricture there is substituted a band of cicatricial tissue which will not fail, even under the most favorable conditions, to produce a more serious stricture than that which existed at the start. Resection must lead to shortening of the canal." At first sight, the author goes on to say, total resection—*i. e.*, removal of the entire circumference of the diseased portion of the canal—seems destined to afford results far inferior to those of partial resection, for, say the classical writers, in the latter we preserve the floor of the urethra, which is indispensable for the reconstruction of the canal. However, he continues, theoretical arguments against urethral resection, even total resection, are not in consonance with the results, which are quite remarkable. There is a class of serious blennorrhagic strictures accompanied by hard and voluminous callous masses and multiple fistulæ. These morbid products and canals may be extirpated as well as the entire strictured portion of the urethra. After such an operation the canal may be resected in any one of three different ways: 1. A permanent catheter having been introduced, the tissues may be left to granulate around it; in this way restoration of the canal and of the perinæum is obtained by second intention. By this measure the cure is exasperatingly slow, and the remote results are generally bad and sometimes call for complementary plastic operations. 2. Daniel Mollière devised a method by which, after urethrectomy, the urethra was restored by sewing its two ends together. This method has given very good results, but it must always be remembered that the urethral suture is very delicate and generally gives way. 3. The surgeon must content himself with creating an artificial canal around the catheter by suturing the soft parts adjacent to the urethra. Hitherto those who have practiced this method have preserved a small portion of the lumen of the urethra, but in a case related by the author this precaution was omitted. The case was that of an artisan, thirty-nine years old, who was admitted into the author's hospital service on September 9, 1893, on account of pain and difficulty in urination, together with perineal fistulæ through which there flowed a mixture of pus and urine. He showed signs of syphilis, but at the time of his admission he had no progressive lesions of the skin; there was nothing abnormal on any of the mucous surfaces, and there was no lesion of the osseous system. Nothing abnormal was noted about the external genitals except that the meatus was a little contracted. In the perinæum there was found a mass as large as one's fist, elongated from before backward and in breadth almost filling the space between the two ischia. This mass, situated in the median line, developed equally to the right and to the left, was covered with skin of an almost uniform deep red, violaceous color. On palpation, this mass was indolent, nodular, but slightly movable, of unequal consistence, but very hard in certain places. At several localities on the perineal surface thus deformed by this mass of irregular induration there were observed a certain number of little funnel-shaped depressions more or less deepened in color at their openings. From some of these a small amount of liquid more or less purulent could be seen to exude. Moreover, on the left half of this perineal mass, a short distance from the median line and about two fingerbreadths in front of the anus, there was to be seen an inflamed surface, more tense and redder than the neighboring skin and presenting a little narrow opening by which there escaped urine, easily recognized by its odor and turbid serosity. This discharge had accumulated during the preceding night—that is to say, during a few hours. A probe introduced into this opening was arrested in the midst of hard tissues at a depth of three centimetres. The patient said that he urinated sometimes by the catheter, sometimes by the fistulæ. Urination by the urethra had generally been comparatively easy except for the last few days; urine escaped drop by drop from the fistulæ and kept the patient constantly wet. A No. 15 conical flexible olivary bougie introduced in the urethra was arrested at nine centimetres from the meatus. Similar bougies, Nos. 12, 9, and 6, well oiled, proved equally incapable of complete introduction. On the 10th of October the author saw the patient and decided to practice urethrectomy with complete ablation of the indurated mass. On the 18th, anæsthesia having been induced with ether, preceded by an injection of atropine and morphine, under the ordinary antiseptic precautions, it was found impossible to make the grooved sound enter the urethra more than to the distance of nine centimetres. An incision was made in the median line, extending from the scrotum to a point two centimetres in front of the anus, through a hard mass which creaked under the knife. It was only when a depth of four centimetres was reached that the beak of the sound was felt. On causing the latter to protrude a little, the anterior part of the bulbo perineal portion of the urethra, coinciding with the front of the stricture, was opened. This metallic sound was withdrawn and replaced by a No. 16 flexible bougie, which was passed out through the opening, bent back upon itself, and tied by its two ends in front of the meatus. By this loop of bougie the parts situated in front of the stricture were kept elevated and the lips of the perineal wound were held apart laterally by means of wires; then the excision of the indurated tissues surrounding the urethra, amid which the urethra was lost, was proceeded with. This part of the operation took about fifteen minutes. The indurated mass thus removed, partly with a sharp curette and partly with curved scissors, was of about the size of a large orange. Little purulent collections were found at two or three points. These masses having been removed, there was left a broad and deep breach of continuity, bleeding but little, measuring about eight centimetres from before backward and five centimetres across. Therefore between the anterior and posterior portion of the severed urethra there was a gap of at least six centimetres. M. Rollet then endeavored to find the vesical portion of the urethra by means of a channeled sound. Toward the lower angle of the wound he presently discovered it and introduced into it Tripier's guttered dilator, by which there escaped somewhat turbid urine. Then the bougie that had been tied into the penile portion of the urethra was withdrawn and replaced by a No. 21 Nélaton's catheter, previously disinfected and coated with an oily solution of salol, which, after having emerged from the anterior portion of the urethra, traversed the perineal region for the space of six centimetres and was made to enter the deep portion of the urethra with the guidance of the guttered dilator, which was withdrawn simultaneously with the insertion of the catheter into the bladder. Urine immediately escaped at the mouth of the sound. After the bladder had been emptied it was washed out with a 1-to-1,000 solution of nitrate of silver in tepid water. The catheter was fixed in place by means of a strong wire passed through its walls and also through the thickness of the two lips of the perineal wound. Then the artificial reconstruction of the urethra was proceeded with. To accomplish this, M. Rollet gathered the perineal tissues about the fixed catheter and united them upon it by means of two tiers of silk sutures. Finally a superficial tier of cutaneous metallic sutures was inserted. The wound was dressed with iodoform and cotton, the legs were tied together, and the catheter was connected with a siphon tube leading outside of the bed. The immediate results of the operation were excellent—there was neither rise of temperature, escape of urine by the wound, nor suppuration.

On the 23d of November it was noted that the perineal wound had long been completely and solidly united. The wire which held the catheter in place was cut; after having been thirty-six days in place its surface presented only a very slight layer of incrustation. The bladder was washed out without the aid of a catheter. The patient could pass water in a full stream. He was ordered salol and sulphur baths. The further history of the case is unimportant. The author remarks that it is unparalleled, so far as he knows, as regards the length of the urethra resected, the size of the indurated masses removed, the immediate union which took place, and the excellent results observed as late as five months after the operation. The author expresses himself as convinced that the reconstructed portion of the urethra became covered with epithelium.

The Copious Drinking of Water as a Method of Treating Typhoid Fever.—In the March number of the *Revue de médecine* Dr. Hector Maillart, of Geneva, concludes an article on this subject. As a result of his study of it, he feels convinced that the treatment of typhoid fever by copious drinks may be recognized as a definite method. In order that the treatment may be efficacious, the patient should drink at least from five to six quarts of water daily during the whole febrile period. There is no contraindication to this treatment; feebleness of the heart, far from contraindicating the drinks, may become a special indication for them. The results are a progressive lowering of the fever, disappearance of the dryness of the tongue and mouth, and pronounced sedation of all the alarming nervous, circulatory, and renal phenomena. These results are due to the oxidation of toxines and refuse material, which are rendered soluble and eliminated. The oxidation is shown by the formation of great quantities of urea, and the elimination takes place by the skin and kidneys in the form of profuse sweating and abundant diuresis. This diuresis re-establishes the integrity of the renal filter, and that results in the rapid disappearance of albuminuria. This method of treatment has no notable influence on the course or the duration of the disease. No unpleasant consequences have been observed to result from the treatment, either during the fever, during convalescence, or after recovery. The treatment, which is very acceptable to the patient, is easily carried out, even in cases in which the nervous disturbances are very decided.

A Fatal Case of Cocaine Poisoning.—At a recent meeting of the Paris *Société de chirurgie*, reported in the *Journal des praticiens* for March 24th, M. Reclus read an account of a case which had been sent to him by a physician in the country. It was that of an old man who had died speedily after an injection of cocaine into the urethra. He was seventy-two years old, affected with heart disease and arterio-sclerosis, and subject to attacks of angina pectoris. He was seized suddenly with retention of urine in consequence of hypertrophy of the prostate. After fruitless attempts at catheterism, probably accompanied by the formation of a false passage, the physician had aspirated the bladder and then had tried again to reach it by the urethra, but in vain. It had then occurred to him to practice suprapubic cystotomy, but he wished to make one more attempt at catheterism, and, in order to render it easier by doing away with pain, he had injected into the urethra about five drachms of a five-per-cent. solution of cocaine—in other words, fifteen grains of cocaine. Almost immediately the patient's face became pale, he was seized with generalized tremor, and in a few seconds died of fulgurant syncope. There was no doubt that the death had been caused by the absorption of the enormous dose of cocaine introduced into the urethra. It was known, said M. Reclus, that the urethral and rectal mucous membranes absorbed with great rapidity; therefore, doses of from half a grain to 0·6 of a grain should not be exceeded when there was occasion to anæsthetize mucous surfaces. Diseases of the heart and arterio-sclerosis were not contraindications to anæsthesia by cocaine; on the contrary, the speaker thought that this substance was much less dangerous than chloroform in such cases—carefully managed, it was innocent. So had he been able to do 2,774 operations with cocaine without observing the least accident. M. Bazy remarked that, inasmuch as the urethra would not hold five drachms of liquid, it was probable that the injection had penetrated into the bladder, which absorbed with very great rapidity. M. Verneuil remarked that the author had mentioned the bad condition of his patient's circulatory apparatus. That would have been a reason for employing a feebler dose of cocaine, for the patient was thus predisposed to toxic accidents. M. Tuffier thought that this immediate death could only be explained by an intravenous injection into the corpus cavernosum, for the mucous membrane could not absorb with that degree of rapidity.

Rumination in Man.—In the *Revue de médecine* for March there is an article on this subject by Dr. G. Lemoine and Dr. G. Linnossier, who have arrived at the following general conclusions: 1. Merycism should be divided into two forms, simple and pathological. The latter comprises three varieties—merycism of neuropathic origin with or without dyspepsia; merycism originating in dyspepsia and having a direct connection with it; merycism of dyspeptic origin, but continuing after the dyspepsia has been cured. 2. Merycism should be considered as in its nature a gastric neurosis. 3. The act of regurgitation is a reflex act the point of departure of which is a congenital or acquired exaggerated sensibility of the mucous membrane of the stomach. 4. The mechanism of this act resembles that described by Chauveau and Toussaint as occurring in ruminants, and consists essentially in spasm of the diaphragm and of the inspiratory muscles, which diminishes the intrathoracic pressure and tends to dilate the œsophagus, while the abdominal muscles compress the stomach.

Poisoning with Salol.—At a recent meeting of the Paris *Société de thérapeutique*, a report of which is given in the *Mercredi médical* for March 21st, M. Josias spoke of a case of acute amygdalitis in a girl, eighteen years old, in which he had prescribed fifteen grains of salol to be taken the first day and thirty grains on the following day. Soon a large patch of scarlatiniform erythema showed itself on the inner aspect of the right thigh, while spots looking like those of measles appeared on the left side, and rose-colored papules on the cheeks. On examining the urine, the reaction of carbolic acid and that of salicylic acid were found. The use of salol was suspended, as the patient seemed to have a special susceptibility to it.

Iodide of Potassium in the Treatment of the Bronchopneumonia of Measles.—In the *Journal de clinique et de thérapeutique infantiles* for March 22d there is an article on this subject by Dr. Bicentè, who remarks that the treatment of various forms of broncho-pneumonia by means of iodide of potassium is no novelty. Furthermore, he says, it does not seem to have produced very favorable results with those who have used it. Nevertheless, he has been led to resort to it in the broncho-pneumonia of measles. He had had occasion to administer iodide of potassium to a child, eleven years old, presenting all the symptoms of tubercular meningitis, whose father confessed that he was syphilitic; and the child had recovered. This child's brother, during convalescence from an attack of measles, was attacked with an acute broncho-pneumonia of a suffocating character, which seemed destined to prove fatal speedily. The author gave the child iodide of potassium on account of the family history, and in a very few days it recovered. Not feeling justified in imputing the action of the drug to its antisyphilitic properties in this instance, the author resolved to try it in other children attacked with the broncho-pneumonia of measles and free from specific complications. The result, he declares, has been identical in a large number of cases. He says he has had failures, but they have seemed to him to be in cases of tubercular disease. He has therefore arrived at the following conclusions: 1. In the simple forms, where there is no tuberculosis, the efficiency of the remedy may be counted upon. 2. If there is no improvement in the course of a few days, its employment should be given up and the existence of tuberculosis inferred. He gives the iodide in daily amounts of from three to twelve grains, according to the patient's age. At the same time he uses one or more blisters. In spite of all that has been said against blisters, he remarks, they are a powerful agent, or at least a very useful adjuvant, and the same may be said of large sinapisms. The patient's strength should be kept up by means of grog, bouillon, and milk. A caution is given that if, after the child has shown decided amelioration, tremulousness and dryness of the mouth are observed, iodism is to be feared. In such cases a cure takes place at once on stopping the administration of the drug.

The Pennsylvania State Medical Society.—The programme for the next meeting, to be held in Philadelphia on May 15th, 16th, 17th, and 18th, includes the following addresses and papers: Medicine, by Dr. W. S. Foster, of Pittsburgh; Surgery, by Dr. G. D. Nutt, of Williamsport; Obstetrics, by Dr. E. E. Montgomery, of Philadelphia; Mental Disorders, by Dr. T. M. T. McKenna, of Pittsburgh; Hygiene, by Dr. J. H. Wilson, of Beaver; Ophthalmology, by Dr. George de Schweinitz, of Philadelphia; Hydrophobia, by Dr. Charles W. Dulles, of Philadelphia; Dietetics, by Dr. H. F. Slifer, of Philadelphia; Unique Cases in Practice, by Dr. John M. Batten, of Philadelphia; The Therapeutics of Wooping-cough, by Dr. W. C. Hollopeter, of Philadelphia; Colorado Climate for Consumptives, by Dr. William P. Munn, of Denver; Subcutaneous Emphysema, by Dr. R. G. Curtin, of Philadelphia; Diarrhœal Diseases, by Dr. John Aulde, of Philadelphia; Acroparæsthesia, by Dr. Wharton Sinkler, of Philadelphia; Typhoid Fever, by Dr. Adolph Koenig, of Philadelphia; Tapping of Abdominal Effusions as a Therapeutic Measure, by Dr. W. E. Hughes, of Philadelphia; The Radical Cure for Hernia, by Dr. E. Laplace, of Philadelphia; A Modification of Pirogoff's Amputation, by Dr. F. Le Moyne, of Philadelphia; The Surgery of the Gall Bladder, by Dr. X. O. Werder, of Philadelphia; Section of the Tendo Achillis in Fractures and Dislocations, by Dr. T. S. K. Morton, of Philadelphia; Appendicitis, by Dr. John B. Deaver, of Philadelphia; Amputation near the Ankle, by Dr. G. G. Davis, of Philadelphia; Stricture of the Urethra, by Dr. O. Horwitz, of Philadelphia; The Treatment of Fractures at the Lower End of the Humerus, by Dr. Charles W. Dulles, of Philadelphia; Acute Intestinal Obstruction, by Dr. J. M. Barton, of Philadelphia; Ocular Exploration of the Bladder and Urethra, by Dr. Edward Martin, of Philadelphia; Thyreoidectomy, by Dr. John B. Roberts, of Philadelphia; Puerperal Eclampsia, by Dr. J. C. McAllister, of Philadelphia; Uterine Fibroids, by Dr. Charles P. Noble, of Philadelphia; Acute Endometritis, by Dr. J. M. Baldy, of Philadelphia; Studies in Obstetrics and Gynæcology, by Dr. Anna M. Fullerton, of Philadelphia; Symphysiotomy and other Procedures, by Dr. Horace Fox, of Philadelphia; Cholecystenterostomy, by Dr. B. F. Baer, of Philadelphia; Corneal Ulcers, by Dr. S. L. Ziegler, of Philadelphia; Diseases of the Ear, by Dr. S. MacCuen Smith, of Philadelphia; The Surgical Treatment of Internal Strabismus, by Dr. H. F. Hansell, of Philadelphia; Eye Strain, by Dr. Charles H. Thomas, of Philadelphia; Tympanic Vertigo, by Charles Burnett, of Philadelphia; Massage Methods in the Relief of Tinnitus, by Dr. Louis F. Lautenbach, of Philadelphia; Capsulotomy after the Removal of Cataract, by Dr. L. Webster Fox, of Philadelphia; Intranasal Surgery, by Dr. W. H. Daly, of Pittsburgh; Naso-pharyngeal Catarrh, by Dr. William R. Hoch; Clinical Observations, by Dr. J. V. Shoemaker, of Philadelphia; Epithelioma of the Skin, by Dr. M. B. Hartzell, of Philadelphia; The Curability and Treatment of Tuberculosis, by Dr. S. Solis-Cohen, of Philadelphia; Psychical Phases of Tuberculosis, by Dr. J. M. Taylor, of Philadelphia; The Contagiousness of Tuberculosis, by Dr. A. M. Cooper, of Philadelphia; The Prophylaxis of Tuberculosis, by Dr. L. F. Flick, of Philadelphia; Medical Tuberculosis, by Dr. Hugh Hamilton, of Philadelphia; The Strychnine Treatment of Pulmonary Consumption, by Dr. T. J. Mays, of Philadelphia; A Case of Tubercular Meningitis, by Dr. D. Longaker, of Philadelphia; Tuberculosis of the Falloppian Tubes, by Dr. C. B. Penrose, of Philadelphia; The Treatment of Tubercular Caries of the Spine, by Dr. H. A. Wilson, of Philadelphia; and A Case of Tuberculosis of the Knee Joint, by Dr. E. B. Haworth, of Philadelphia. The following members will take part in the discussion on Medical and Surgical Tuberculosis: Dr. J. H. Musser, Dr. W. B. Ulrich, Dr. J. C. Wilson, Dr. J. Solis-Cohen, Dr. W. E. Hughes, Dr. J. B. Roberts, Dr. DeF. Willard, Dr. G. G. Davis, Dr. J. K. Young, Dr. J. M. Barton, and Dr. B. F. Baer, of Philadelphia. Tubercular Manifestations of the Skin will be discussed by Dr. H. W. Stelwagon, of Philadelphia. Further papers will be read as follows: On Christian Science and the Medical Profession, by Dr. Hildegard H. Longsdorff, of Philadelphia; Should the *Journal of the American Medical Association* be used to Promote Quackery? by Dr. S. Solis-Cohen, of Philadelphia; Reasons for the Revision of the Code of Ethics, by Dr. E. Jackson, of Philadelphia; and Cramming in Medical Schools, by Dr. O. H. Allis, of Philadelphia. There will be an exhibition of pictures illustrating leprosy in various stages of the disease.

The New York Academy of Medicine.—At the last meeting, on Thursday evening, the 19th inst., the paper of the evening was by Dr. Landon Carter Gray, on Persistent Albuminuria and Glycosuria in Functional Nervous Disease, and their Significance.

At the next meeting of the Section in Laryngology and Rhinology, on Wednesday evening, the 25th inst., Dr. Jonathan Wright will read a paper entitled A Consideration of the Vascular Mechanism of the Nasal Mucous Membrane and its Relation to Certain Pathological Processes.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 26th inst., Dr. Brooks H. Wells will read a paper on The Treatment of Abortion.

The Presbyterian Hospital.—At the annual meeting of the board of managers, held on April 11th, the several classes in neurology were united under one class head. Dr. Robert Safford Newton was appointed head of the class in neurology.

The Paris Faculty of Medicine.—The *Union médicale* states that M. Raymond has been elected a professor, to succeed the late M. Charcot.

Original Communications.

SOME DIFFICULTIES IN THE DIAGNOSIS OF CARDIAC DISEASES.*

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The diagnosis of most diseased conditions of the heart seems at the first glance comparatively easy, provided one has had the average training and experience in such conditions. A more careful study of the subject, however, reveals difficulties which are not commonly recognized or certainly are not recorded in the text-books, and which should be known to every practitioner. My notes upon cases of derangement of the heart observed during the past fourteen years are in many instances, to me at least, very interesting, and from these I have selected a few abstracts which, while only serving to indicate in a sketchy and imperfect manner some of the difficulties to be met with, may yet suffice to direct further attention to the subject.

To the superficial observer the presence or absence of a cardiac murmur is sufficient to determine the abnormal or the normal condition of the heart, but it is well known that the presence or absence of a murmur is only one element in the diagnosis. It is not generally known, however, that a murmur may be evanescent. The common belief is that a murmur once developed must be present continuously as long as the morbid condition which gave rise to it persists. This is not the case. A murmur may, and frequently does, appear and disappear and return again within a very few hours. Such evanescent murmurs are most commonly due to functional derangements of the heart, but they are also observed in connection with well-marked valvular lesions. This evanescent character of a valvular murmur was first brought to my notice in 1880, when I was an interne in the Roosevelt Hospital. A woman was admitted with a greatly dilated heart, but no valvular murmur. The house staff made frequent examinations of her heart, and after several days a systolic apex murmur was detected. The attention of our attending physician, a gentleman of distinguished ability in diagnosis, was directed to this murmur, but he disconcerted us by stating that he did not hear it. It was one against three ; but it was one trained physician against three beginners, and we thought that we must have been mistaken. The examination of the patient's heart, which was instituted the moment the attending physician had left us, failed to reveal a murmur, but the next day the murmur returned. Again our attending physician failed to hear it. Happily on the third day we caught the murmur at the right time and our attending physician confirmed our diagnosis. A subsequent autopsy revealed a very marked insufficiency of the mitral valve. That case set me to thinking. Why was the murmur inconstant ? It could not be on account of the weakness of the cardiac muscle, for the heart was beating with equal strength both when the murmur was heard and when it was inaudible. I was inclined then to believe that the fault lay in our own ears, which at times were too dull to detect faint sounds ; but I have since become convinced that this is not the case. Murmurs vary more than ears. The reason why they vary —except in those cases where there is temporary variation in the force of the heart's action—is no more clear to me to-day than it was then. I have since met with many instances of cardiac disease in which a murmur could be heard at one examination and not at the next. It would seem that such variation in the cardiac murmur must occur only when the murmur is feeble in intensity ; but this is not so ; a loud murmur will often be observed to come and go. This noteworthy fact will frequently explain the discrepancy in the opinion of different physicians in regard to the same case. An interesting example of this difference of opinion occurred in connection with the application of one of my patients for life insurance five years ago.

A gentleman, aged twenty-eight years, of nervous temperament and slight physique, applied to one of the prominent life insurance companies of this city for a risk upon his life. He first came to me for a physical examination. As I had had an intimate medical knowledge of him for the previous three years, I assured him that he would have no difficulty in passing his examination; but to satisfy him I made a *careful*, not perfunctory, examination of his heart and lungs and of his urine. There was not the slightest evidence of anything abnormal, except that his pulse rate was a hundred. The heart sounds were clear and distinct and the heart was not enlarged. Knowing my patient's nervous temperament, I attributed his rapid heart action entirely to excitement, and I cautioned him to get the examiner to count his pulse before subjecting him to a general examination. Three weeks later he came to me and said that his application had been refused. Three examiners had listened to his chest and then declined his risk on account of " something wrong with his heart." I was surprised, for I knew the gentleman had no organic disease, and I proceeded to examine his heart again. My ear had hardly touched the chest wall before I heard a particularly loud systolic apex murmur. After explaining to him that there was no cause for alarm I directed him to report to me for examination once a month. I found that this murmur was sometimes present and sometimes absent, sometimes loud and sometimes very feeble. But up to a year ago, when he left New York, he never had a symptom of derangement of the heart, nor was there any increase in the size of the heart.

During the past year I have had, and have still, under frequent observation a dispensary patient who, in addition to a well-marked aortic diastolic murmur, has a systolic apex murmur which is at times so loud as to be recognized by all my students, and yet on the following day it is frequently entirely inaudible.

Last summer there was admitted to the Roosevelt Hospital a man with unmistakable *chronic* fibrinous pericarditis. The characteristic " to-and-fro " murmur of pericarditis was so loud that it could be recognized at once either by the ear or the stethoscope. Yet that murmur would be found to disappear and reappear from day to day or even from hour to hour. In addition to this a blowing systolic endocardial-like murmur would occasionally be heard to the left of the situation of the apex beat.

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* Read before the New York Clinical Society, February 23, 1894.

Another source of error in the diagnosis of cardiac disease is the curious fact which is, I believe, almost altogether overlooked, that some murmurs are heard only by the unaided ear and are inaudible to the stethoscope, while some are inaudible to the ear and are heard with great distinctness by the stethoscope. This curious characteristic of murmurs may be noticed in any form of valvular disease, but it is most common in connection with the murmur of aortic regurgitation. This murmur, whether feeble or loud, is sometimes only heard by the ear *and not* by the stethoscope, while in other cases the murmur can not be detected by the ear alone, but is quite loud when heard through the stethoscope. I have no explanation to offer in regard to this peculiar phenomenon, but the fact is unmistakable. It will readily be seen how important it is that this should be recognized, for if the heart be acting regularly and an examination be made with the stethoscope alone the heart sounds might appear absolutely normal and thus a most serious valvular disease would escape notice. I make it an invariable rule in cases which admit of the least doubt to listen both with my ear and with the stethoscope. If there seems to be every reason to believe that the heart is healthy, I think it better to listen with the ear alone than with the stethoscope alone.

The fact that murmurs do not always confine themselves to their regular areas is still another source of error. We naturally expect to find the murmurs of aortic valvular disease in the neighborhood of the second intercostal space to the right of the sternum, or over the upper portion of the sternum itself; but this is not always the case. The murmur of aortic regurgitation, particularly, is often heard *only* over the ensiform cartilage, and the examiner who forgets this possibility may readily be deceived by listening only over the upper portion of the sternum, and, if he there hears a clear second sound, he may readily make the mistake of believing the aortic valves to be healthy. It must also be remembered that the murmur of aortic regurgitation may occasionally be heard at the apex of the heart only. A murmur heard in the neighborhood of the second intercostal space to the left of the sternum may indicate disease of the pulmonary valves or of the pulmonary artery; but disease of the right heart is so rare in the adult that it is hazardous to make such a diagnosis. The true condition is usually disease of the aortic valves or pressure upon the pulmonary artery. I ventured the diagnosis of disease of the pulmonary valves in a patient whom I saw this past summer at Bellevue Hospital, my reason for the diagnosis being the fact that she had the symptoms of malignant endocarditis, together with a loud, harsh systolic murmur, heard with greatest intensity over the situation of the pulmonary valves, while hardly any murmur could be heard over the aortic area. It is well known that malignant endocarditis, unlike rheumatic endocarditis, may attack the right heart in the adult. There seemed good reason to believe, therefore, that the murmur was produced in the pulmonary orifice. The autopsy showed that I was mistaken. There was malignant endocarditis, but the disease had involved the aortic valves, while the pulmonary valves were intact. In a like manner we may be embarrassed or deceived by the situation of the murmur of mitral stenosis. We are told that this should be heard only at the apex of the heart, but it is often inaudible at this point, and is only heard in the third intercostal space to the left of the sternum. I have also heard this murmur in the axillary region, considerably to the left of the apex beat, and nowhere else, and I have observed a harsh systolic murmur over the pulmonary orifice in a case which autopsy showed to be mitral stenosis.

Five years ago I was very much puzzled by hearing a double murmur over the situation of the liver. A man applied to the Medical Clinic of the College of Physicians and Surgeons for relief from the ordinary symptoms of heart disease. The peculiarity of his case consisted in the absence of any signs of enlargement or disease of the left ventricle, while the area of cardiac dullness to the right of the sternum and between the fourth and sixth ribs was considerably increased. A distinct, but not loud, double murmur was heard over the same area, but with its maximum intensity in the fifth space and the nipple line, or seemingly over the liver. Dr. Delafield's brilliant diagnosis of a small aneurysmal sac having its origin just above the aortic valve and projecting downward was confirmed by autopsy some two years later.

The fact that the presence of a murmur does not necessarily indicate valvular disease is generally recognized; but far too many physicians still regard a cardiac murmur and heart disease as synonymous terms. The subject is too extensive to be adequately dealt with within the limits of this paper; but it will be sufficient to call attention to the case, before mentioned, of the gentleman who applied for life insurance and was rejected on account of a mitral systolic murmur. During the five years since that murmur was discovered there has never been the first symptom of derangement of the heart's action, and there has been no increase of the size of the heart or other sequelæ of valvular incompetence. It is not uncommon to discover cardiac murmurs in patients who have never experienced the slightest symptom of derangement of the heart's action, and in many of whom no evidences of hypertrophy or other compensation can be found. The experience of examiners in life insurance will confirm this statement. A little leakage through a valve by no means destroys the efficiency of the valve, and, in the absence of evidence of progressive endocarditis, such cases should not be regarded as true heart disease.

The difficulty of diagnosis in cases of cardiac disease without a murmur is much greater. This applies particularly to disease of the aortic valves, or of the aorta just above the valves. The diagnosis of the dilated heart, or of cardiac weakness, is comparatively simple, since in these cases we have direct evidence of the failure of the cardiac muscle, and the presence or absence of a murmur signifies but little. Well-marked stenosis of the mitral orifice or of the aortic orifice, though often unattended by its characteristic murmur, is usually recognized without much difficulty. The class of cases of which I wish to speak particularly is that in which there is either atheroma or thickening of the aortic valve with atheroma of the aorta, or there is atheroma of the aorta in the neighborhood of the orifices of the coronary arteries without involvement of the aortic valves. The difficulties in the diagnosis of some of these cases is very great indeed, and yet they should be recognized if possible, since the prognosis is of the utmost gravity. It is a condition which occurs in New York more commonly than is generally known, and more especially among the upper classes. Most of my cases have been men of middle age, who have been in active business for many years, and who have worried over their business. These men complain for a considerable length of time of "dyspepsia"; then they have painful sensations about the heart, then palpitation of the heart, and, finally, dyspnœa on exertion. They are liable to sudden death, usually with symptoms of angina pectoris. In some cases the diagnosis is comparatively easy, but in others it is very difficult indeed. Two years ago two gentlemen put themselves under my care at about the same time and with very similar symptoms.

Each was over fifty years of age, and each was in active business. The first patient had suffered for several years from palpitation of the heart and flatulence, and these symptoms had distressed him so that he had lived for a year on a diet of hot water and chopped beef, but without material benefit. At the time he came to me he was building a house, and he found when he ascended the steep temporary stairs that he was short of breath, and that, as he expressed it, "there was a devil under his breast bone." Careful physical examination revealed an intermittent but strongly acting heart, a clear first sound at the apex, while no aortic valve sound could be heard. There were no murmurs. The apex beat was in its normal position, but auscultatory percussion showed the heart to be unquestionably enlarged. There was no increase of arterial tension and no renal disease. Several subsequent examinations showed that the aortic valve sound was persistently absent. There never was a murmur. Here, the enlargement of the heart and the absence of the aortic valve sound, the attacks of pain and dyspnœa on exertion, and the location of the pain under the sternum, rendered the diagnosis of disease of the aortic valve and of the aorta very probable, and the bad prognosis was confirmed by his sudden death with symptoms of angina pectoris a year later.

The second patient had suffered for a long time from flatulent dyspepsia and an intermittent heart. For about a year previous to the time that he consulted me he had suffered from attacks of asthma and bronchitis. He was very nervous about himself, and especially in regard to his heart. He had taken many drugs.

Examination of his chest showed that he had moderate emphysema of the lungs. His heart was intermittent but fairly strong: all the valve sounds were normal, and auscultatory percussion showed no increase in the size of the heart; the apex beat could not be felt. There were no murmurs. Subsequent examinations revealed no change in these signs. There was no increase of arterial tension and no renal disease. This case I regarded as just the opposite of the former one. I considered his cardiac symptoms to be entirely functional, and I believed that his attacks of asthma were due to his emphysema superinduced by reflex conditions from his stomach. I gave an absolutely good prognosis. I stopped all medicine except some iodide of potassium and told him to go back to his business instead of spending his time in bed, as he had been doing. Within two weeks he improved wonderfully, and after about six weeks he came into my office one day to tell me how well he felt. His heart was regular; he had had no asthma for some time, and only complained of some shortness of breath on active exertion. The next day, while ascending the stairs of the elevated road, he complained of pain under his sternum, and then almost fainted. He was assisted to a neighboring drug store. When he sat for a moment, a small quantity of blood gushed from his mouth and he died. I could not obtain an autopsy, but I believed that all his symptoms were due to an aneurysm of the arch of the aorta.

I had been misled by the nervous character of the individual, which had induced me to underestimate the severity of his symptoms, and since to this was added a heart normal in size and strength and with absolutely no change in the valve sounds, I was completely deceived as to his true condition. The following is a typical case:

Last spring a gentleman was sent to me by his son, who is a physician, for advice as to the condition of his heart. He was sixty years of age; he had always been remarkably healthy, and he was a very active and hard worker. His only discomfort was an occasional attack of "biliousness." He considered himself perfectly well at this time, and he had only come to me to please his son. In 1892 his son noticed that there was an exaggerated heart action, and about the same time it was noticed that there was some little difficulty in breathing on ascending many stairs. Just before I saw him he had applied for an increase of life insurance, which was denied him, because, he said, his pulse rate was ninety to the minute. He denied to me that he ever felt ill except for some dyspeptic symptoms, and occasional attacks of slight pain running down the left arm. I found distinct hypertrophy of the heart, a very feeble aortic valve sound, and no cardiac murmurs. At that time there was no increase of arterial tension, but there was some thickening of the radial artery. The pulse was slightly intermittent. There was no renal disease. The age of the gentleman, the enlargement of the heart, and the feeble aortic valve sound, together with the pain running down the arm and the thickened radial arteries, led me to give a very unfavorable prognosis. Subsequent examinations both by his son and myself failed to reveal a cardiac murmur, but after three months a moderate increase of arterial tension developed, and he complained of dyspnœa and discomfort after eating, which was relieved by eructations of gas. He continuedat his business and insisted that he was perfectly well. On the evening of December 17th he suffered from dyspnœa on exertion, having to rest four times in walking half a mile, and he reached home exhausted. After a few minutes' rest he ate heartily and his symptoms disappeared. He retired to bed at 11.30 P. M. About 1 A. M. he complained of dyspnœa and pain in the region of the heart; there was eructation of gas and there was profuse perspiration. The pain and oppression became intense, and he died at 1.30 A. M.

It will be seen that these cases do not resemble angina pectoris except at their termination, and that for a considerable period before death the symptoms are slight or obscure. It seems to me that the most significant signs of this condition are enlargement of the heart and an absence of the aortic valve sound, or a feeble aortic valve sound, though both these signs may be absent.

Still another source of error in the diagnosis of heart affections is to be found in the estimation of the size of the heart. Many hearts have undoubtedly been regarded as diseased which were absolutely healthy, simply because the apex beat was farther from the median line than is commonly the case, or because percussion revealed a larger area of cardiac dullness than the books would lead us to expect. In the beginning of my experiments in auscultatory percussion I believed that I had discovered a number of enlarged hearts, and I was disposed to criticise those gentlemen under whose care the patients were for not observing the enlargement of the heart, or for not discovering the nephritis or other cause of the enlargement. Further investigation showed me that these hearts were only of normal size, and that I must modify my preconceived ideas of the size of the heart as revealed by percussion. The left border of the heart is, in the healthy individual, much farther to the left than is usually supposed. It is commonly regarded as being about a quarter of an inch to the right of the left male nipple, and it is believed that much increase of the area of dullness beyond that point indicates enlargement of the heart. As a matter of fact the line of the left border of the heart usually runs through the areola of the male nipple and often to the left of the areola of the nipple. Repeated examinations of the size of the heart by percussion and by palpation of the apex beat have convinced me that the latter is the more reliable method of estimating moderate increase in the size of the heart; but even here the opportunities for error are numerous. The general rule is that the apex beat in the healthy adult heart is to be found an inch to the inner side and two inches below the left nipple, and that an apex beat below that point or further to the left indicates that the heart is either enlarged or displaced. This is, however, a very poor rule, for, in the first place, even the male nipple is subject to great variations in its position, both vertically and as regards the midsternal line; and, in the second place, the heart itself is movable in the chest and the apex may occupy different positions at different times, depending upon the position of the body. I have frequently felt my own apex beat, while lying upon my back, within the nipple line, and then, upon turning upon my left side, I have felt it half an inch to the left of the nipple line. It is better to estimate the distance of the apex beat to the left of the midsternal line than to compare its position with the nipple. Such apex beats may be found in the healthy adult male in the erect position—from two inches and a quarter to four inches and a quarter to the left of the midsternal line, depending upon the size of the individual and the degree of development of the chest. When the apex beat is found to be four or more inches to the left of the sternum it might be outside of the nipple line, and if the heart's action were excited it might easily be mistaken for a hypertrophied heart. The knowledge that the heart's apex may normally be found beating to the left of the nipple line should save us from the error of a hasty diagnosis of cardiac disease in the absence of distinct symptoms of cardiac derangement.

In many cases the question as to whether a heart is to be regarded as enlarged or not is by no means a simple problem, and its solution must be sought through a process of rational deduction, rather than by the direct evidence of physical examination.

I have observed in a few autopsies an error much more difficult to eliminate—namely, decided hypertrophy and some dilatation of the heart, without any displacement of the apex beat to the left or downward, and without increase of the area of cardiac dullness. Such cases are those in which the hypertrophy has developed especially in an anteroposterior direction, and, though the heart is enlarged, such enlargement does not reveal itself upon the surface of the chest. The obvious lesson from these cases is that in connection with well-marked symptoms of heart disease, either with or without murmurs, the apparently normal size of the heart should not affect our diagnosis. It should also be borne in mind that we may have marked valvular disease without enlargement of the heart.

Attacks of palpitation or of intermittent heart action are commonly regarded by the laity, and sometimes by the physician, as indicative of heart disease; but it is well known that most of these cases are merely functional disturbance of the organ, and that in the absence of signs of enlargement of the heart, or of failure of the heart muscle, together with the presence of normal heart sounds, we can almost always make the correct diagnosis. But that such is not always the case is shown by the history of the gentleman cited above, who died suddenly from the exertion of ascending the elevated railroad stairs. In conditions of mitral stenosis especially, we are liable to fall into the error of regarding the palpitation of the heart and the irregular pulse as due to functional causes alone, since in connection with grave obstructive lesions of the mitral valve there is frequently no obvious enlargement of the heart and no murmur. In cases of doubt we must delay a positive diagnosis until we can assure ourselves of the presence or absence of signs of venous congestion or other evidence of failure of the normal circulation. Cases of functional derangement of the heart often assume startling and serious forms, and yet the prognosis is almost invariably good.

I have had under my care for the past twelve years a lady, now well on in years, who has suffered for over twenty years with attacks of very grave intermittence of the heart, often attended with syncope, but to-day she is without a sign of enlargement of the heart or murmur, or any evidence of failure of the heart muscle.

A young married lady had had several attacks of rheumatism, and following her first attack, ten years ago, she became subject to attacks of palpitation of the heart and syncope. She was told by two physicians that she had heart disease, and she was very apprehensive of her condition. She came under my professional care three years ago. I had known her for many years, and I always understood that she had heart disease, but I also knew her to be of a very active, emotional temperament. The knowledge of this latter fact, combined with the result of repeated examinations, which revealed a heart normal in size and action, with clear heart sounds, normal in every respect except for a slight prolongation of the first sound at the apex (which was undoubtedly due to the rubbing of the apex against the chest wall), and the fact that she had gone for ten years without dropsy or other signs of venous engorgement, enabled me to disregard the rheumatic history, and to express the positive opinion that there was no organic disease of the heart. The result has thus far justified the diagnosis, for she has given up the idea that she is an invalid, and for the last two years she has been entirely free from symptoms of cardiac derangement.

Some cases which are regarded as merely functional palpitation of the heart are undoubtedly examples of adherent pericardium, since this latter condition is perhaps the most difficult to recognize of all diseased conditions of the heart. Adhesions between the two layers of the pericardium are frequently discovered at autopsy, although they had not even been suspected during life.

It would seem that the secondary congestions resulting from a dilated or weak heart would invariably be referred to their proper source; but it is easier to overlook this than one would at first suppose. Cases of acute dilatation of the heart without endocarditis are those which are most liable to lead one into error. Here the symptoms of interference of the functions of the stomach and liver may assume such prominence as to entirely overshadow the breathlessness and palpitation which would otherwise direct our attention at once to the heart, and even though the heart be examined the absence of a murmur and the absence of a rheumatic history may entrap the unwary.

My attention was once directed by a physician of ability to a man who had suffered from jaundice for over a year and in whom the liver was found to be considerably enlarged. The history which had been obtained was purely one of derangement of the functions of the liver and stomach. A physical examination of his chest revealed a dilated and hypertrophied heart without evidence of endocarditis, and a few questions developed the fact that he had been taken with breathlessness at the same time that the jaundice appeared, and that some six months before dyspnœa and palpitation became so severe that he could not work or undertake any active exertion. He had, however, not thought much of these symptoms, but was much distressed by his jaundice and dyspnœa. Calomel and alkalies had failed to relieve, but rest in bed and cardiac tonics reduced the size of the congested liver and relieved all his symptoms.

The cases of atheroma of the aorta before referred to are often attended by symptoms of flatulence and other disturbances of the stomach, and so are liable to mislead us.

In some cases the symptoms are almost purely those of disease of the lungs, and we may be led into error by the absence of anything directly pointing to disease of the heart or aorta. This is particularly so in connection with a small aneurysm of the first portion of the aorta, which, giving no symptoms or physical signs in itself, may by pressure upon a bronchus produce cough and attacks of asthma. It is only by a complete system of exclusion that the correct diagnosis can be inferred, and then it is, of course, an inference only, and not a certainty.

Four years ago I saw in the wards at Roosevelt Hospital a man whose symptoms were those of emphysema of the lungs and a very intense general bronchitis. He had frequent and severe attacks of asthmatic breathing, which I at first attributed to the severity of the bronchitis, but though the bronchitis cleared up the attacks of asthma continued, and even increased in severity, and I therefore suspected and looked for signs of an aneurysm of the arch of the aorta, but without result. I had him under observation for nearly two months, but could find no definite explanation of his asthmatic attacks. The attending physician who followed me also suspected aneurysm, but could find no definite signs of this condition. The patient died suddenly and an autopsy revealed an aneurysm of the ascending arch of the aorta and pressing upon the right bronchus.

In this connection the society will remember the case which I reported a year ago of the man in whom, without symptoms characteristic of anything in particular, physical signs of fluid in the left pleural cavity were found, and when the chest was aspirated a large quantity of bloody serum was withdrawn. It will be remembered that no explanation could be found for the presence of blood in his pleural cavity, or even for the presence of a pleurisy. His sudden death made what was before very obscure perfectly plain. The autopsy revealed an aneurysm of the descending arch of the aorta and an old rupture through the lung into the pleural cavity. This rupture had become filled up by fibrine and the leakage stopped, till rupture occurred at another point and he died. In this case there was nothing upon which to base even a suspicion of aneurysm. His only symptoms were those of pleurisy with a bloody effusion.

Finally, cardiac disease may be overshadowed by acute disease of the lungs or by general diseases. This applies particularly to malignant endocarditis. Here the fever and erratic chills are liable to be referred to other sources than the heart, and that organ is overlooked, or the disease is mistaken for malarial poisoning. The presence of a cardiac murmur and the purpuric eruption, or other evidences of hæmorrhage, will usually direct attention to the true nature of the disease, but these signs may be absent. I had a case at the Roosevelt Hospital last summer which illustrates this point.

A patient was admitted with signs of consolidation of the lower lobe of the right lung. It was then noted that there was a soft systolic apex murmur, but there was nothing else to indicate disease of the heart and the murmur was disregarded. When I saw him he had been under observation a month or more, and the signs of consolidation of the lung had not diminished. Three weeks previously he had begun to have very great fluctuations of temperature; the temperature would rise to 105° or 106° in the evening and then fall nearly to normal in the morning. There was also considerable sweating. I heard no cardiac murmur, and in the presence of distinct evidence of involvement of the lung the idea of disease of the heart never occurred to me. The diagnosis seemed to me to lie between an empyema, an abscess of the lung, and acute tuberculosis of the lung. Several deep explorations of the lung with an aspirating needle failed to discover pus, and the examination of the sputum failed to reveal the presence of tubercle bacilli. He died one week later, and the autopsy revealed an unresolved pneumonia and very marked malignant endocarditis, with vegetations upon the tricuspid, mitral, and aortic valves—a condition which would seem impossible to occur without the presence of loud murmurs.

I believe that such murmurs must have been audible most of the time, and that had I examined the heart subsequently to my initial examination I must have heard them. An analysis of a number of cases of heart disease occurring in the wards of Roosevelt Hospital in which vegetations upon the aortic and mitral valves were shown to be present by post-mortem examination demonstrates, however, that in many cases no murmurs were heard, and I derive considerable comfort from this circumstance. The case is, however, an interesting and instructive one as showing how completely disease of the lung may overshadow the more serious disease of the heart.

THE MODERN TREATMENT OF HÆMORRHOIDS.

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That hæmorrhoids can rarely be cured without an operation is far from the truth; equally so is the doctrine disseminated by quacks and advertising specialists, that the disease can always be cured without surgical interference. Certain forms of the disorder are amenable to the simplest constitutional and local treatment, while others can only be permanently relieved by the radical removal of the hypertrophied, prolapsing tumors. Only a clear appreciation of the different varieties of the disease will enable us to determine the proper treatment for any individual case. The operative measures are more brilliant and more remunerative than the others and are generally successful; but in many cases, I might almost say the majority, they are unnecessary. The comfort of the patient and his eventual usefulness will be equally conserved by less radical measures.

The old division into external and internal hæmorrhoids is still generally adhered to by surgeons and rectal specialists. This division, natural and distinctive, has a twofold meaning. External hæmorrhoids are those developing outside of the external sphincter muscle and clearly in view; they are also those originating in the inferior and middle hæmorrhoidal vessels, and are therefore connected with the general circulation. Internal hæmorrhoids are those inside of the external sphincter and out of view, unless prolapsed; they develop from the interior or superior hæmorrhoidal vessels, and are connected with the portal circulation. It is maintained that these may arise from the middle hæmorrhoidal veins, but I do not think the claim can be established. There is a class of hæmorrhoids which develop just upon the anal margin, neither without nor within, sometimes denominated mixed hæmorrhoids, which probably do originate in these vessels, but they are truly external piles, and will be discussed under that head. A clear appreciation of these different varieties and their origins is most essential to our success in their treatment.

External Hæmorrhoids.—There are four varieties of these—viz., thrombotic piles, varicose piles, inflammatory piles, and connective-tissue piles.

Thrombotic piles are small round or oval tumors, usually just beneath the skin or mucous membrane. They are due to coagulation of blood in a dilated hæmorrhoidal vein, or to the rupture of the vein, with consequent extravasation and clotting of blood in the cellular tissue. They are painful at first, owing to unusual tension, but the pain generally subsides, and the clot is usually absorbed, leaving only a slight induration. If irritated, however, these piles may set up a cellular inflammation or phlebitis, which will eventuate in marginal abscesses or subtegumentary fistulas.

Treatment.—Cold applications are said to give relief to the pain in these cases, but I have found a sponge, wrung out of very hot water and firmly pressed upon the parts, much more effectual. The radical treatment of this class of piles is so certain and simple that it is never well to temporize with them. Having anæsthetized the parts by a hypodermic injection of cocaine, or by the ether spray, lay the tumor open in the line of the radial folds, and turn or scrape out the clot thoroughly. Then wash the cavity out with a bichloride or boric-acid solution and pack with iodoform gauze. There is no necessity for styptic applications; pressure will control all bleeding, and after twenty-four hours the packing may be removed and the parts be allowed to heal. I have operated on two thrombotic hæmorrhoids above the external sphincter in this same manner without packing even, and there has been no hæmorrhage. The simplicity and certainty of this method should restrain us from ever temporizing with these little piles.

Varicose Hæmorrhoids.—This form of external piles is composed of varicosed veins about the verge of the anus. They are seen more frequently in professional men, and women in the higher classes of society, than any other. They are due to constipation and prolonged straining at stool. There are generally no distinctly isolated tumors, but rather an anal coronet of varicosed, tortuous veins. After defecation or straining they swell and become very prominent, thus causing rather an uneasiness than pain. This passes away as soon as the straining has ceased and normal circulation is established.

Treatment.—When uncomplicated, these hæmorrhoids never require an operation. The patient's bowels should be carefully regulated; he should avoid prolonged sitting at stool. After each operation and at bedtime he should lie down upon his side and apply firmly to the parts a sponge frequently dipped in ice water. After this he should apply an astringent ointment spread upon a piece of soft lint, and retain it in position throughout the night. I have found no ointment better than the following:

℞ Ung. belladon.,
" stramonii,
" ac. tannici, } .... āā ℥ j. M.

Under this treatment they will disappear and the patient's anus become as well as ever.

If from any complication, such as fissure or some other variety of piles, an operation should be necessary, these varicose hæmorrhoids may be operated upon at the same time by excising the more prominent portions of the varicosities either by scissors, crushing, or the clamp and cautery. The latter method is quite painful in these cases, owing to the involvement of the cutaneous tissue. I have frequently cured this variety of piles by making cross sections of the ring of veins at several points with the Paquelin knife heated to a dull red heat; the subsequent pain, however, is a serious objection to this method. The operation by crushing is much less painful and equally effectual. I have not tried puncturing the tumors with a fine-pointed Paquelin tip, as advised by Dr. Kelsey, having heard of several cases of abscesses produced by this method.

In a number of these cases, where I could not trust the patient's faithful attention to the regimen detailed above, I have injected the varicosities with a modification of Shuford's solution. The most thorough antisepsis should be practiced in making these injections. The needle should be introduced into the varicosities while distended, the blood should then be pressed out, and the fluid injected. No more than four minims should be used in a single injection, and usually only two minims. So far I have had nothing but the most satisfactory results—no sloughing, no abscesses, no inflammation to speak of—in this class of cases.

Electrolysis is said to be effectual in this variety of hæmorrhoids. I have tried it in only two cases, both of which were failures. Where there is no complication, however, demanding anæsthesia, the application of cold sponge compresses and astringent ointments, and the regulation of the patient's habits and bowels, will effectually cure almost every one of these cases.

Inflammatory External Hæmorrhoids.—These tumors develop at the verge of the anus, and originate in the inflammation and swelling of the anal folds. They are called by Cripps œdematous piles. They have a mucous and muco-cutaneous covering, and are composed of distended arteries and veins and considerable connective tissue, with more or less serous effusion. They are more or less club-shaped, their small ends extending within the external sphincter. They may be single or multiple, sometimes entirely surrounding the anus. They are due to traumatism or irritation, either from within or without the rectum. Anal or rectal ulcers with irritating discharges, proctitis, fissures, chancroids, improper toilet material, rough or too vigorous wiping, careless use of the enema tube, pederasty, rectal masturbation, rough chair seats, and hard fæcal masses may all produce them. They develop rapidly, are very painful, and when severe produce in the patient the constitutional symptoms of inflammation. Where there are more than one we are very likely to find a small fissure between them.

The distress occasioned by this variety of piles is out of all proportion to their external appearances, and as they may proceed to suppuration and all its consequences they can be said to be positively dangerous to life. However, this is an extreme view to take of them, for it is very rare that they produce disastrous results. Nevertheless, there is no other form of hæmorrhoids that so completely disables one.

Treatment.—The cause of these piles should, of course, be sought out and removed, if possible. After this two methods of treatment are open to us—the radical, or operative, and the palliative, or antiphlogistic. Where the disease is associated with internal hæmorrhoids or fissure, the operative method should always be selected, for the relief is immediate and the cure of both disorders certain. Operators are agreed that no advantage is gained by waiting for the inflammation to subside. One must be careful, however, in operating, when the tumors are much swollen, not to take away too much cutaneous tissue, and thus invite contraction. Having determined to operate, there is very little choice, so far as these hæmorrhoids are concerned, between the ligature, excision, crushing, or clamp and cautery methods. If internal hæmorrhoids are to be removed at the same time, I employ the clamp and cautery; but if there are none of these, I generally use the crusher or excision. Whether the clamp and cautery or crusher are used, we should always dissect up the cutaneous attachment of the tumors with scissors, thus forming a sort of pedicle to which the clamp is applied, leaving a smaller mass of tissue to cut through, and at the same time avoiding the pain caused by burning the sensitive skin. It is advisable to stretch the sphincters and remove the internal hæmorrhoids first, although this is not an invariable rule. It is not proper to remove one of these tumors with an internal hæmorrhoid *en masse*, for it involves the destruction of too much tissue. By removing them separately we leave little strips or islets of mucous membrane around the anal margin, which are valuable safeguards against stricture. If there are no complications, such as fissure and internal hæmorrhoids, these piles may be removed under cocaine instead of general anæsthesia. A few drops of a four-per-cent. solution are injected along the base of the tumor; the latter is dissected up and crushed or tied off almost painlessly. There is no danger from hæmorrhage in these cases, for the vessels are all in view and can be easily caught up and tied; but this is rarely necessary, as pressure usually suffices. A neater and more surgical method is to clip the tumors off with scissors and bring the edges of the wound together by firm catgut sutures.

Where the pain is not severe, and where for any cause an operation can not be done in this class of cases, much relief can be obtained by the cold sponge applied as described above. About fifty per cent. of hamamelis added to the water thus used increases greatly its efficiency. The patient should lie upon his side in bed with his hips elevated. When the cold is not being applied he should keep upon the parts a layer of the ointment given above, to which may be added sulphate of morphine, one to three grains to the ounce. By these means the pain will generally disappear within the first twenty-four hours, and the swelling will gradually subside, leaving the radial folds thickened, indurated, and more prominent, always ready to inflame again, but painless until that occurs. Leeching and puncturing only add fuel to the flames, and the efforts frequently made to keep these tumors within the sphincter are as unwise as they are painful. They belong outside and should be left there.

After the inflammation in these tumors has subsided they should either be treated by persistent cold applications and careful regimen, or they should be snipped off with scissors, having been cocainized. After operating with this drug we should always be on our guard against hæmorrhage occurring about one to three hours subsequently. The vessels which are contracted by the drug relax as its effects wear off, and bleeding of alarming character sometimes occurs.

Connective-tissue Hæmorrhoids.—This class of piles, called also cutaneous piles, skin tabs, condylomata, etc., is the last division of the external hæmorrhoids. They are composed of hypertrophied tabs or masses of connective tissue about the margin of the anus, having a mixed cutaneous and muco-cutaneous covering. They are due to irritation and consequent hyperæmia of the parts. They may result from varicose, inflammatory, or thrombotic piles, or from more serious disease within the rectum. I shall not here discuss their relations to specific or malignant disease, further than to say that I have seen them in both disorders and also unassociated with any other disease of the rectum whatever. I do not therefore consider them to be reliable evidences of any particular disorder. In their quiescent state they cause little inconvenience beyond the difficulty of thoroughly cleansing the parts. They are liable, however, to become inflamed from very slight traumatism or irritation of the parts. When this takes place they swell and become exceedingly painful, sometimes ulcerating or sloughing, and producing all the constitutional symptoms of inflammation and suppuration. The vascular element in these tumors is very small, they being largely connective-tissue growths.

Treatment.—Careful attention to regulation of the bowels and rectal hygiene, the application of cold to the parts, and the avoidance of injury to them will keep these piles in a quiescent state, but will not cure them. Even advertising quacks do not profess to take them away without operation. If they do not annoy a patient they should be left alone; but where they do, they should be removed. It is far better to remove them when quiescent than when inflamed, although excellent results may be obtained in the latter state, and patients will submit to operation when suffering pain who would not think of it at another time. We operate either by crushing, clamp and cautery, or scissors. Unless the tumors are very large, the simple clipping of them off with scissors is the most satisfactory. The clamp and cautery offer a sense of security against hæmorrhage in removing large inflamed masses. I prefer, however, to use the palliative treatment described in the last section until the inflammation and œdema have largely subsided, and then to remove the tumors either by scissors or crushing. General anæsthesia is rarely necessary in these cases, the four-per-cent. solution of cocaine acting quite efficiently. The only after-treatment is antiseptic cleanliness about the parts. If the piles have not been very large ones, the patient may go about his occupation on the next day, wearing a T-bandage, with antiseptic dressing to the parts.

Having spoken of the various operations in external hæmorrhoids, it is but frank to say that so far as the patient's comfort is concerned, it is rarely necessary to use any of them, if we except that for thrombotic piles. The palliative treatment will relieve all present symptoms, and keep the patient comfortable and fit for his work in life. If he prefers to follow out these measures, knowing that they are palliative, rather than undergo the radical cure, he should have this privilege, and the large majority choose it. Whatever course is pursued, however, antiseptic cleanliness should be as strictly observed here as anywhere else in the body.

Internal Hæmorrhoids.—Numerous and long divisions of this variety of piles have been made by the older writers, but practically there are only two—viz., capillary or nævoid internal hæmorrhoids and varicose internal hæmorrhoids.

All hæmorrhoids have, of course, an arterial supply. Those denominated "arterial" by Allingham and others are such as are supplied by more than one artery, and in which these vessels and their accompanying veins have become varicosed. From a practical point of view, however, they are only varicose hæmorrhoids, and are treated in precisely the same manner. The columnar piles described by Hamilton are simply hypertrophies of the pillars of Glisson. They contain more connective tissue than the ordinary internal hæmorrhoids, but are composed largely of varicosed vessels, and come properly under the second division.

Capillary hæmorrhoids consist of a superficial vascular area, situated upon the surface of the rectal mucous membrane. The tumors, which are generally very small, are composed of the terminal branches of the superior hæmorrhoidal arteries and veins and their connecting capillaries. The walls are thin and bleed easily upon touch, or upon the passage of hard fæcal masses. The hæmorrhage from them is not generally so profuse as from the varicose variety, but it is more frequent and continuous, and may be repeated day after day for years in strong, healthy persons, without any sensibly bad effect. It is this form of bleeding that has given rise to the popular fallacy that hæmorrhages from piles are salutary. They can not be made out by touch, but generally they come into view when the patient strains and the rectum is everted by the thumbs of the surgeon. Sometimes they are too high up for this, however, and the use of the speculum becomes necessary. I have found the small size of my own modification of Cantrel's speculum (Fig. 1) the most satisfactory for this purpose. I wish to call attention to a fact noticed in these cases—viz., that the point of hæmorrhage is not generally at the summit of the tumor, but nearly always in the sulcus at the point of junction with the normal mucous membrane. I believe it is due to this fact that cauterization often fails to check the bleeding; the cauterizing agent, being applied to the summit, does not touch the offending point.

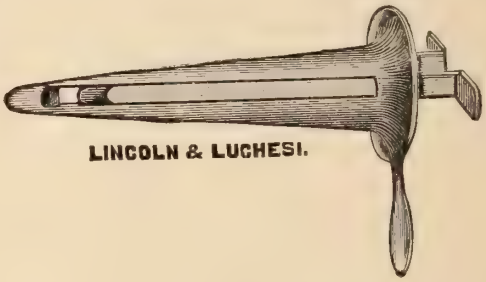

FIG. 1.

These tumors are too small for the use of ligature, crusher, or clamp, and must be dealt with in some other manner. The most usual method is by the application of chemically pure nitric acid to the bleeding point. This is generally effectual if the proper point is touched; but it has this objection: it is impossible to limit the action of the acid, and it sometimes leaves an ulceration considerable in size and very intractable. I have twice seen very intense inflammation of the rectum follow its use. Recently I have adopted in its stead the use of electro-cautery applied by a small, round platinum electrode. The application is more accurate, and the extent of cauterization much more under control. The parts should be first cocainized either by simple application or by hypodermic injection of the drug. The speculum may or may not be used, according to whether the tumors come easily into view or not. The results in the cases treated so far have been all that could be desired, although I confess that five cases is too small a number upon which to base conclusions. These methods require no general anæsthesia, and are very acceptable to patients upon this account. The third method, advised by Dr. Bennett, of Fort Worth, consists in anæsthetizing the patients, dilating the sphincters, and scraping off the little tumors with a curette or Volkmann's spoon. I have had no experience with this method and can not speak of its efficiency, although I do not doubt it will accomplish the desired result. Nevertheless, it has the disadvantage of necessitating anæsthesia, which the other methods do not.

Varicose internal hæmorrhoids are the ordinary simple internal piles. They may be associated with external hæmorrhoids, and when the two are united they form what are called mixed hæmorrhoids. It is not our purpose here to discuss their ætiology and pathology, further than to say many of these cases are due to constitutional and local causes, which, if properly treated or removed, the hæmorrhoids disappear. Intestinal indigestion, chronic hepatic congestion, catarrhal proctitis, prostatic urethritis, cystitis, urethral stricture, retroversion and prolapse of the uterus, rectal ulcerations, and neoplasms are frequently the causes of hæmorrhoids, and no treatment will give permanent relief to the rectal symptoms until these conditions have been removed or cured. Proper hygienic and dietetic management, with simple local applications, will give such complete and prolonged relief in overfed, inactive, plethoric individuals that I question if we are frequently justified in doing radical operations in such cases, especially in elderly people. Their diet should be limited and generally changed, alcohol should be interdicted or extremely limited, exercise should be increased and systematized, the functional activity of the bowels should be regulated, and prolonged application of cold should be practiced in the reclining posture, either through the rectal plug, irrigator, or sponge, at least twice a day. Enemata, it seems to me, oftener aggravate than relieve hæmorrhoids, although experiences differ in this regard. Where the liver is torpid or enlarged, an occasional blue pill at bedtime, or, perhaps better still, thirty grains of sulphate of sodium and ten grains of phosphate of sodium, taken in hot water before breakfast, with five minims of nitrohydrochloric acid after each meal, yield the most satisfactory results.

When such measures fail, operations of some kind become imperative. Of the large variety of these I shall only mention five—viz., injection, clamp and cautery, crushing, ligature, Whitehead's.

The first has been so generally and persistently condemned by surgeons that it requires some moral courage to indorse it, yet it has its field, and, when properly used, gives us some of our most satisfactory results. In simple internal varicose hæmorrhoids, where there is no ulceration, and where the sphincters are comparatively relaxed, the method is eminently successful. It requires some skill and experience, however, to apply it properly. Its aim and object, as I use it, are to produce inflammatory induration in the hæmorrhoid, and subsequent absorption. As applied by some, with a view of producing sloughing of the tumor, it is, to my mind, unsurgical and dangerous. The tumor should be brought into view without a speculum, if possible, *thoroughly cleaned*, and the needle introduced from the base into its center. The blood should then be pressed out, and the fluid injected in very small quantities into different points of the hæmorrhoid through the one puncture. Four minims is as much as should ever be injected into the largest hæmorrhoid at one time, and two minims are generally sufficient. The solution which has given me most satisfaction (a modification of Shuford's) is as follows:

℞	Ac. carbolici....................	f ʒ jss.;
	Ac. salicylici....................	ʒ ss.;
	Sodii biborat....................	ʒ j;
	Glycerini....................	ad f ℥ j. M.

It will be observed that the solution contains less than twenty per cent. of carbolic acid. It produces no pain, does not confine the patient, and if it does not radically cure, it certainly obtains for the patient long immunity from annoyance. I have treated many cases by this method under the promise that if it did not succeed they would return and have the radical operation done, but so far only two have come to the radical measures. Sometimes it is necessary to inject a large hæmorrhoid more than once. The repetitions should be made about three weeks apart. Occasionally I have had slight sloughs, but I am confident they have been due to foreign matter carried in upon the needle, or to introducing the fluid too near to the surface. There is nothing in the fluid to produce suppuration. In the two cases which I have operated on by other methods, after injection, the inflammation set up was so unusual and the pain so severe that the patients sought relief by any means, and this I could promise them by radical operation. The tumors in these two cases when removed were swollen, tense, and much inflamed, but contained no pus. Whether they would have produced abscesses or not, it is impossible to say, but one thing is certain, neither of them was a typical case for this method of treatment, and I had unwisely yielded to the patients' desires for non-operative treatment. I have never had a death, hæmorrhage, fistula, fissure, stricture, protracted ulceration, or any serious result due to this method in over a thousand injections, and I believe that this experience is due to these precautions—viz.: antisepsis, weak solutions, and the small quantities of fluid injected.

The statistics furnished by Dr. Andrews and Dr. Mathews are drawn from the work of uneducated quacks and tyros, who used the method in all sorts of cases indiscriminately, and are, therefore, worthless. Those of Dr. Kelsey are from his own experience, generally with strong solutions, without antisepsis, and with comparatively large injections. They can not apply to the method as above detailed. As to the permanency of the cure it is questionable. Some cases recur in two to four years, but a secondary treatment is as effectual as the first; the large majority, however, have no return, and if we can keep our patients comfortable so long by so simple a measure, it is certainly worth trying, in properly selected cases.

Clamp and Cautery.—Where the sphincters are contracted, the hæmorrhoids prolapsed, painful, and large, and where there are fissures or ulcerations, a more radical operation than injection becomes necessary. In such cases the clamp and cautery operation is a most excellent procedure. Since Mr. Smith began to advocate this method it has steadily grown in favor until it bids fair to supersede the old and justly popular ligature, and become the accepted radical, safe, effectual operation for piles. It has been so frequently described that I shall only refer to some points in the technique which seem to me important.

1. The piles should be counted and located before the sphincters are dilated. After dilatation the whole hæmorrhoidal area becomes so congested and swollen that it is difficult to outline the tumors perfectly.

2. The ordinary method of dilating by introducing the thumbs and dragging them forcibly and rapidly apart is too violent. It tears the mucous membrane and ruptures the muscular fibers rather than stretches them. I prefer introducing one finger after another slowly until all are in the rectum and then using the hand as a sort of conical bougie. By this method there is less traumatism to the parts and the paralysis of the sphincters is more perfect and permanent. After this the parts should be cleaned antiseptically.

3. The hæmorrhoids should be grasped by the clamp in a line parallel with the axis of the gut. Contraction and stricture from this operation are due to grasping the piles at an angle to this line, and thus leaving a circular cicatrix, which contracts and lessens the caliber of the gut. The horizontal cicatrix when it contracts draws the rectum upward and overcomes any tendency to procidentia. The hæmorrhoidal forceps (Fig. 2) facilitates this grasp, besides making the operation altogether easier. It is introduced over the pile closed and parallel with the axis of the gut; when opened, the pile rides into it and is drawn down; the clamp is then applied in the line of its grasp, the pile cut off with scissors, and the cautery applied. The last point in the technique of this operation to which I wish to call attention is the application of the cautery. I have seen operators grasp large mixed hæmorrhoids with muco-cutaneous coverings in the clamp, and proceed to burn them off as deep down between the blades as the heated knife will go. There are two errors here. The cautery should never be applied to the cutaneous surface where it is possible to avoid it. Ninety per cent. of the pain following the operation comes from burning the skin. The skin tabs or cutaneous portion of the hæmorrhoid should be dissected off with scissors and the clamp applied to the pedicle thus formed. There is no danger of hæmorrhage from the part thus left unburned, as it is in full view, and any bleeding point may be grasped and ligated or controlled by pressure. Secondly, the cautery, when used at the proper points, should only be used at a dull red heat to char the cut surface from which the tumor has been removed. It is a protection against hæmorrhage and not a destroyer of tissue. The crushing produced by the clamp is also a protection against hæmorrhage, and if the tissue it grasps is burned away this barrier is lost. Moreover, this deep burning is liable to result in deep sloughs which are slow to heal.

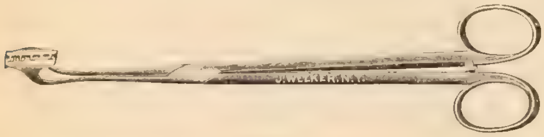

Fig. 2.

The objections urged against this operation—viz., pain, hæmorrhage, stricture, and long convalescence—are, I believe, utterly unfounded. The writers on rectal diseases who are most severe in their condemnation of it show by their own descriptions that they have never mastered the technique of the operation. In over five hundred cases operated on by this method I have not seen a death, a hæmorrhage of any moment, or a contraction of the rectum, except where the tumor was caught transversely. The average period of convalescence is about twenty-five days; I mean by this, complete healing of the parts, but the patients are not generally confined more than four or five days. The bowels are generally moved on the third day by licorice powder or cascara sagrada, and a boric-acid enema is given after each movement. There is generally no necessity of packing after this operation, yet I am in the habit of dusting the parts with iodoform and placing a small strip of gauze over each point from which a tumor has been removed. A good compress over the anus and a snug T-bandage are all the dressing that is necessary. Patients are allowed to sit up after the third day, and are generally about their usual vocations within a week. While some patients may do well who are operated on without any previous preparation, it is certainly best to have the bowels thoroughly emptied and as aseptic as it is possible to make them. Any other course seems to me reckless surgery.

Crushing.—This old operation, recently revived by Allingham, Jr., consists in catching the pile in a powerful clamp with smooth, dull edges, and crushing it off. It is virtually the clamp and cautery operation with the cautery left out. In comparison with the latter operation it is only slightly less painful, and perhaps the parts heal a little more quickly, but it is certainly not so safe as to either hæmorrhage or sepsis. It is more difficult of performance and consumes more time. It is only applicable to small internal and to external inflammatory and connective-tissue hæmorrhoids, where the cautery would involve cutaneous tissue, and thus be very painful. I have used it in fifteen such cases, all of which did very well, but I confess to considerable anxiety after each operation. A strong Kelsey clamp serves every purpose of the Allingham crusher, and is much more easily applied.

Ligature.—The profession is so familiar with this operation that I shall only refer to it most briefly. In an experience quite limited compared with that of Allingham, Mathews, and many others, I have had no failures with this method, so far as cure is concerned. It seems to me, however, to possess the following disadvantages: viz., it can not be made an aseptic operation; it requires considerable time; it is very painful, the patient often suffering intensely for a week or more; it necessitates the use of the catheter very often; it involves the danger of secondary hæmorrhage where the ligature has partly cut through and thus become loose; it is liable to leave ulceration and stricture, especially where the whole circumference is involved; and, finally, it confines the patient to bed for a considerable time. These objections are not vital, nor are they wanting to some degree in the other operations for hæmorrhoids. It is only a matter of degree, and in my hands the clamp and cautery operation has given fewer undesirable sequences than the ligature, and therefore I prefer it. Between the two methods—Allingham's and transfixion—the latter would seem the safer, as there is less danger of the ligature slipping off. This, however, is a rare accident, and does not weigh much in making our conclusions.

Excision, or Whitehead's Operation.—This operation, which has become so widely known by the name of its author, is the most recent candidate for favor in rectal surgery. It consists in dissecting off the mucous membrane and the subjacent piles from the muscular wall of the rectum, excising them, and stitching the edges of the skin and mucous membrane together. The theory upon which it is based—the removal of the whole pile-bearing area—is promising enough. "If the offending parts be removed, annoyance from them will certainly cease," is the argument used for it. Even so; but in this area lies the circulatory apparatus of the rectum; there is a design in this convoluted mass of veins and arteries; they have a function to perform and are unlike the vermiform appendix—the sooner removed the better. The question arises, then, Can we excise this area with impunity? I am not convinced of this as yet; experience alone can teach us, and of this we have not had sufficient to determine it. I have done the operation a very few times, and so far as my own cases go the results have been ideal. I have seen a number of cases, though, in which they were not so good. Among the bad results which I have seen follow the operation are two cases of stricture, two of ulceration, and one of prolapsus with erosion, such as is described by Dr. Kelsey. Another result of this operation which I have not seen described consists of the apparent drawing up into the rectum of the cutaneous tissues about the anus, so that they became macerated, soft, and white; it gave the patient considerable pain, besides producing a fœtid, disagreeable odor to the parts. It has also seemed to me that the mucous membrane of the rectum was drier, less supple, and more easily torn after this operation than before. Are these results due to the operation or the operator? The success of this operation depends upon many things—viz., perfect asepsis, the choice of the exact line for incision, a very accurate dissection, the absence of tension when the edges are brought together, and immediate union of the parts. Where there are so many pitfalls one is likely to stumble. Only perfection in its technique can establish its position as a surgical procedure. The time and skill necessary for its performance, the hæmorrhage, and the certainty of disastrous results where immediate union does not occur place this among the major operations. It should never be undertaken except by a practiced surgeon familiar with and equipped for his work. When excision by this method succeeds there is little pain, the convalescence is shorter than by any other method, and the results are most satisfactory to patient and physician. But the question is still unanswered, "Do these results justify the risk?" In cases with large hæmorrhoids surrounding the rectum and much procidentia, with relaxation of the sphincter, the operation will find its most useful field, and when its technique has been so perfected as to remove the many sources of failure, it *may* supersede the simpler and more rapid methods.

There are just two points in the operation not generally mentioned in the books to which I would call attention, both of which are calculated to shorten it and lessen hæmorrhage. After the muco-cutaneous tissue has been cut through, the hæmorrhoidal masses can be peeled out with the handle of a scalpel or dull-pointed scissors, except at a few points where adhesions occur. It is from these points that the hæmorrhage comes; the tissues at these points should be grasped by two artery forceps and cut between them, and the blunt dissection should then proceed. The second point is a suggestion made by Dr. Ware. When the dissection has been completed, a long clamp is placed upon the gut at the upper border of the portion to be excised. Long sutures are then passed about a quarter of an inch apart in through the skin, the clamped gut, and out through the skin on the opposite side. The mass is then cut off above the clamp, and the sutures are drawn out from the caliber of the gut and cut in two. They will thus form a row around the anus and can be quickly tied. I have not tried it as yet, but I am told the procedure greatly shortens the operation.

ON SYMPTOMATIC HETEROPHORIA.

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My method of dealing with muscular anomalies, as exhibited in a study of some two hundred and fifty recent consecutive cases, leads me to urge a fourfold plan in dealing with symptomatic heterophoria: First, correct any refractive error; second, wait; third, experiment with prisms; fourth, tenotomy.

In precisely this order were managed these two hundred and fifty cases; and, while endeavoring to make due allowance for personal error, it is not unreasonable to claim that, occurring in private work alone, greater weight should be attached to the evidence they carry than would naturally be the case in hospital studies, where the care and responsibility are divided.

It is well known that there is an intimate relation between accommodation and adjustment in all binocular vision. This relation is interdependent and interinfluential. Any interference with the one function entails, it is logical to assume, disturbance in the action of the other; and this relation, so evident, is of such importance that we can scarcely fail to conclude that heterophoria, with its accompanying asthenopia, depends chiefly upon an inharmonious action on the part of these two elements due to fault in the one or in the other. It is my belief that the primal fault lies in an existing ametropia in the vast majority of instances.

Assuming at all events these premises to be correct, it will be my purpose here to set forth certain observations and conclusions pertaining to the muscle question, gathered, as has already been noted, from personal experience alone, and to submit them without bias, yielding at all points to their logic.

I shall not weary the reader with statistics, although the basis of this paper rests upon a most painstaking and elaborate schedule of these two hundred and fifty cases, for it is my wish to present conclusions rather than figures. Nothing may be more misleading than "statistics"; for, as in the story of the man who when asked to make out a table of data inquired as to which view of the question he was desired to prove, so we are in great danger of molding our statistics much after the manner of our faith. Behind the cold table of statistics are the many subtle details and opinions which make the analytical deductions the more valuable when the statistician and the observer are, as under the present circumstances, one and the same.

Much might be said of symptoms and consequences attending heterophoria, but in this connection the methods of diagnosis and management are alone strictly pertinent.

In the determination of the kind and degree of muscular error, I invariably use that instrument of precision the phorometer, which I consider to be as essential here as I do the ophthalmometer in refractive studies, for no one can eliminate with certainty his personal error in holding prisms. In the management of the phorometer I have for years taught classes in ophthalmology these cautions: (*a*) To invariably test first for hyperphoria, for this is a delicate test as a rule, involving a fine skill in detail, which is most liable to be erroneously determined when the muscles are fatigued from having undergone what I term the grosser tests. (*b*) To test in direct succession only alternate pairs—*i. e.*, at one time a vertical pair, then a horizontal pair—never, for instance, testing abduction and adduction one immediately after the other, because at least four muscles are involved in the test for any two, and fatigue of an opposing pair enters here as a vitiating influence; in other words, I allow rest to take place, and gain this end by this alternate method of testing. (*c*) To never take an immediate answer, but to allow a short period of time, neither too long nor too short, and averaging about ten seconds, to elapse, in order to permit of such readjustment of the muscles as the latter are capable of exhibiting. (*d*) To make certain of the kind of diplopia phorometrically produced, using for this purpose a red-colored glass, this point being highly essential in observations of hyperphoria. (*e*) To explain carefully to the patient the idea of fusion; two lights must fuse to make a test; extinction of one light does not constitute a test. To do this I hold two ignited matches, one in each hand, before the subject, and, making their flames coincide, explain that fusion is taking place; then, while again separated, I blow out the light of one match, which, leaving one burning, I explain constitutes extinction and not fusion; and then I call attention to the fact that it is fusion—like the former—that I am after, and not extinction. I have often in this way excluded error, and have been able to account for the great discrepancies between various observers of the same patient. (*f*) To have the candle light and the eyes of the patient on the same level, and within reasonable limits not to mind the exact adjustment of the head; for when adjustment of the head makes a considerable difference in the tests, I consider the condition present as indicative of paresis rather than of insufficiency. (*g*) To secure like conditions of light, time of day, etc., in a series of tests. (*h*) To determine if the tests for powers and for insufficiencies bear harmonious or contradictory relations; if they are of the latter, I conclude that I have by no means reached the bottom of the matter. (*i*) To never consider as final a single set of experiments, for repeated examinations are imperative; indeed, this inquiry is not one easily satisfied. (*j*) To confirm the tests by no one method alone, but by various other researches, such as by the use of the Maddox prism, the Maddox cylinder, and enlarged copies of the Graefe "dot and line" test placed at twenty feet distant, both horizontally as well as vertically. This latter test I have used for several years, and I can not recall that I have seen this idea anywhere mentioned or described. Recently I have had constructed a Maddox cylinder carried in a frame for use on the phorometer, and made so that it can be revolved on its axis into exactly vertical and horizontal positions; it yields very accurate results by this means.

My method of management, when I have determined the diagnosis of symptomatic heterophoria, may be further discussed under three heads: (*a*) Refractive; (*b*) prismatic; (*c*) operative.

Of emmetropic heterophoria I have nothing to say in this paper.

(*a*) *Refractive.*—Non-operative symptomatic ametropic heterophoria is, as a rule, successfully managed by a careful correction of the existing error of refraction and by time. And in this connection I wish to lay stress again upon the very great value and assistance of the ophthalmometer in connection with the older methods of detecting and correcting astigmatism. The ophthalmologist to whom this instrument is a stranger can not realize, until he has used it, its accuracy and labor-saving character.

The conditions of refractive correction and time fulfilled have resulted most favorably in fully two hundred of the cases of my present collection. I can not, therefore, lay too much stress on the value of correcting ametropia. The result in these two hundred cases, or eighty per cent. of the whole, is a most cogent argument in support of my belief that errors of refraction are most commonly at the bottom of symptomatic errors of muscular adjustment. Certainly this procedure is highly conservative, and therefore commendable, appealing to our common sense and satisfaction. It is also an eliminative feature in the selection of cases capable of further amelioration only through prisms or operative measures.

It goes without saying that very great pains must be taken not alone with the selection of suitable lenses, but also with the correctness of their grinding, centering, and adjustment. An invariable rule of mine is to inspect both the lenses ordered and their adjustment, requiring patients to report for this purpose.

The question of how fully ametropia is to be corrected has no invariable solution. In children, I generally order full, or very nearly full, correction; in young people, I decide upon correcting as much as is "accepted," encroaching upon the "latent" ametropia as far as possible and with the expectation of a fuller correction in a few months. It is well known that the relative accommodation being less than the absolute, a patient will very often accept more correction over both eyes simultaneously than singly, and I always try to take advantage of this fact. In adults, the accommodation, being less elastic, renders the problem far simpler than in earlier years, and it is often to be noted that patients of mature years will comfortably accept full correction for near work, if not for distance.

(*b*) *Prismatic.*—In connection with symptomatic heterophoria, I have been led to conclude that prisms serve chiefly as the means of temporary relief afterward to be discarded, or as a medium of diagnosis. For a long time I have ceased to prescribe them for permanent use. They serve somewhat in the same capacity as do crutches—*i. e.*, they give support to weak muscles for a time, while the latter are recuperating from a period of overexertion, and in this connection I always order prisms of low degree, correcting but a portion of an insufficiency. In diagnosis I use them in preparation for contemplated operations, conceiving that they may be worn with great aid in determining the amount of heterophoria which gives rise to symptoms; for without their employment eyes are often in so strained a condition that we can not accurately determine exactly what is the true degree of the insufficiency, while by their action in giving support the eyes assume a state of calmness in place of irritability, and then we may discover that the degree of the prisms worn is a guide to the amount of heterophoria underlying the mischief.

It might then be inquired, why not order these prisms to be worn constantly? Indeed, it might be a good plan to do so; but I am of the opinion that we should, wherever consistent with good results, discard our crutches, and I am further convinced that we have the means at hand for so doing—namely, in judicious surgery.

Already, I have touched on the value of prisms used in office work. Upon their value in connection with the phorometer I need not further dwell.

As for their value in calisthenics I am much in doubt, though I am sure that they have served in this manner favorably in a number of these cases.

(*c*) *Operative.*—When a sufficient period of time under refractive correction has elapsed, and this time should not be less than six months under ordinary circumstances, without affording decided relief, and especially where, in addition to lenses, prisms are giving relief, I am in favor of surgical readjustment of the offending muscles. Though a seeming paradox, I am also in favor of this procedure where prisms do not yield relief. Under both these circumstances I am a believer in the efficiency and expediency of tenotomy. I do not believe in tenotomies first and lenses afterward, but, as I have repeatedly asserted, in the reverse order.

In these two hundred and fifty cases tenotomy was performed upon only twenty patients—a very small percentage. After such eliminative measures as I have outlined, the number of cases subject to tenotomy is so small that I anticipate favorable results with a degree of certainty in which I am seldom disappointed. In an examination of these twenty cases I found such results as justified the measure in every case without exception. The only superiority of this fourfold method lies in its conservatism and elimination.

The technique of operation is comprised in the much-discussed "graduated tenotomy." This surgical measure has the advantages of very slight traumatism, ease of execution, and absolute certainty, in connection with the phorometer, of accurate surgical results. Indeed, done with care, even the dreaded "stitch" is usually avoidable.

When a sufficient effect can not be secured in a single operation without extensive cutting, I consider it highly detrimental to persist until the desired effect is attained, but believe that further results should be secured in a subsequent operation, deeming it wise that the correction of heterophoria should be divided between the muscles, instead of being sustained by surgery upon a single muscle. This may be done sometimes at the same sitting. It is, moreover, desirable to secure a slight overeffect in an endeavor to compensate for the contraction in healing.

Much has been said and written on this operation. Much has been said of the "latent" muscular error that appears, and that the heterophoric tests yield the same results after as before the operation. On account of the opposition in the associated action of the muscles and their counterbalancing influence, this may truly be a latent insufficiency that reveals after operation an apparent return to the original condition. Yet, on the other hand, it may be that these muscles do, in healing, become restored to their former position with unaltered leverage power. But *relief* is what follows the procedure when done after the eliminating processes. This relief is due either to the actual readjustment by surgery, or else to the enforced muscular rest, only temporary albeit, which follows the operation, much in the same way that eyes, inert during atropinization, afterward perform their duties in a proper manner, when before their functions were accompanied by asthenopia.

In the study of these two hundred and fifty cases I have certain special observations to present. In a recent paper by Dr. S. M. Payne is set forth an ingenious and plausible theory—to wit, that, where there is deviation horizontally alone, the ametropia is isometric, and conversely, where the deviation is vertical, with or without lateral tendencies, the refraction is anisometric. I have found this proposition to be true in a very large proportion of my cases, the number of exceptions being only thirty out of the whole series, or eighty-eight per cent., according with the law as enunciated. The ophthalmometer, I believe, will, with its accuracy and the more attentive use of the phorometer and its various adjuncts, hereafter greatly reduce the percentage of exceptions; and, moreover, we must remember that we can not be entirely certain of the accuracy in the subjective tests of our patients. The practical value of this theory teaches the importance of very accurate work in correcting ametropia, for it is the very slight degrees of astigmatism rather than gross errors that influence the law, and of the quality of astigmatism it is the "mixed" variety which plays the leading part. And it is to be noticed that, where exceptions to this theory occur in vertical deviations, the spherical lenses were isometric, as a rule, again showing the importance of discovering small amounts of astigmatism. Furthermore, the value of employing several methods instead of one is apparent from the fact of there being so many exceptions, which by their employment might have shown patients to be inaccurate judges, and the like.

Heterophoria I am in the habit of classifying, for convenience, under two general heads—heterophoria simplex and heterophoria complex. These hybrid terms apply, the former to lateral deviation and the latter to vertical insufficiency, with or without lateral tendencies.

Symptomatic heterophoria naturally occurs prior to the presbyopic period as a rule.

In my series of cases heterophoria complex occurs most frequently in astigmatism, as might be rationally expected, and, while far less often accompanying hypermetropia and myopia, it is to be found oftener in the latter than in the former. Here, I think, the explanation lies in the assumption that hypermetropia is a nearer normal condition than myopia. Generally, as is natural, esophoria was associated with hypermetropia and disappeared frequently under correction of the latter, while exophoria was usually found in connection with myopia.

It is noteworthy that hyperphoria was oftenest found in company with exophoria, and, as I have noted in other cases, in emmetropia the latter condition also prevailed, in conformity with the notion that emmetropia inclines toward myopia. In this connection it is curious to note that hyperphoria seldom occurs alone.

In the matter of operative interference, attention should be called to the fact that hyperphoria very commonly disappeared in these cases after the reduction of exophoria or esophoria, and *vice versa.*

The question of surgical measures in heterophoria has provoked in the past violent discussion and has led to extreme views both on the one side and on the other. I am convinced that the truth lies between these extremes. After having followed in the management of these cases my conservative eliminative plan, the remaining patients to be subjected to operation resolved themselves into what may be termed *selected* material, and the results of the method, as has been said, most happily justified these tenotomies. It has been contended that there was no alteration of muscular adjustment through the "graduated tenotomy." I believe that the contention touches not so much upon the method, but upon whether the tenotomy does secure any effect upon the adjustment. Surely it would be highly unsurgical to endeavor to get an effect in any way other than in the usual "graduated" method—*i. e.*, with cocaine (to secure the co-operation of the subject), the phorometer, light, and prisms. As to whether we can secure readjustment in this manner or not, I am of the opinion that it is entirely feasible. At all events the tenotomy, done according to the "graduated" method, and after my method of elimination, has afforded relief in my cases without exception. I do not mean extravagant relief, but relief supplementary to the underlying basic principle of refractive correction. It may be asserted that the correcting lenses would have been followed by the same results. In these twenty cases of my table relief was not secured, or was but partial, although plenty of time was allowed for results, before resorting to surgery. These cases, in which operation was advised and performed, were probably instances in which there had been long abuse of the eyes, or neglect, or in which an ametropia was not, until after a long period of time, the subject of concern. I noted that the amount of heterophoria was far greater in cases selected for operation than in the others. This may throw light on this point, for it is rational to assume that the longer the delay in seeking relief the greater will be the heterophoria and the more radical the remedy necessitated.

I very much regret that I do not know how to test a single muscle for insufficiency. Here I ought to say that I consider binocular single vision as an essential in distinguishing between heterophoria and paresis. And so, though I have without avail experimented on my own eyes in order that I might judge in person of subjective tests, I must fain content myself with the conclusion that insufficiencies are not pathological, but are really defects in leverage power due to malposition or to general debility; whereas, in the attempt to study a single muscle we trench on the ground of pathology—*i. e.*, paresis.

In conclusion, I think I may say, as the outcome of these investigations, that the wise plan lies in the middle course, as I have outlined it, and that we shall seldom fail to afford relief by following this conservative method, without enthusiasm on the one side or prejudice on the other.

3 East Forty-first Street.

A STUDY OF THE MINUTE ANATOMY OF FUNGOUS ENDOMETRITIS AND MYELOMA (SARCOMA) OF THE UTERUS,

WITH RULES FOR THEIR MICROSCOPICAL DISTINCTION.

By CHARLES DIXON JONES, B. S., M. D.,
FELLOW OF THE NEW YORK ACADEMY OF MEDICINE,
BRITISH GYNÆCOLOGICAL SOCIETY, ETC.

The microscopist is frequently called upon to examine scrapings from the mucosa of the uterus, and upon the result of this microscopical examination largely depend not only the correct diagnosis of the case, but also the prognosis and its proper treatment.

The gynæcologist, meeting with a case of persistent hæmorrhage from the uterus, will first probe the uterine cavity, and, finding a portion of the lining membrane roughened or nodular, he will suspect the presence of so-called fungous or glandular endometritis, especially if the patient is somewhat advanced in age, or has had a miscarriage within several months. As soon as it is found that the mucosa is nodular he should explore the cavity of the uterus. This is best accomplished after rapid dilatation. An exploratory dilatation and curettement, followed by a microscopical examination of the specimen, should always be adopted prior to any radical operation, such as hysterectomy or removal of the appendages. The immediate cause of the hæmorrhage is frequently a removable one, and if the above-described plan be followed, the powerful aid of the microscope is called in to clear up the diagnosis and set all doubts at rest. The gynæcologist thus arrives at an exact knowledge of the pathological condition, and his subsequent therapeutics will be placed on a scientific basis.

With rigid antiseptic precautions the curettage is unattended by any risk, and no subsequent pyrexia need be feared unless malignant disease be present. The curetted tissue should be preserved in dilute alcohol or a half-of-one-per-cent. solution of chromic acid, and sent to the microscopist for him to examine in order to determine the nature of the disease.

According to the views held by the majority of gynæcologists at the present time, fungous endometritis, or glandular hyperplasia, is considered to be the result of a chronic formative endometritis, leading either to a simple hyperplasia of the utricular glands, or even to a new formation of utricular glands, as well as an increase of the surrounding myxomatous lymph tissue. For our pathological studies of this disease up to the present time we are chiefly indebted to Ruge and Veit, who have fixed and firmly established in medical literature the term fungous endometritis.

There are many objections, from a pathological standpoint, to the views held by these authors, the chief one being that no other instance is known in which a chronic inflammatory process leads to a new formation of glands; then, again, in all other cases it is the connective tissue which is invariably the substratum of all plastic or formative processes, and not the epithelial, the muscle, or the nerve tissue. These considerations have induced Dr. H. J. Boldt, of this city, to study microscopical sections made from scrapings of the uterine mucosa as well as sections from the uteri which he has removed in the operation of colpo-hysterectomy on account of uncontrollable hæmorrhage.

Dr. Boldt's studies are not as yet completed, but he has kindly given me permission to refer briefly in this paper to the results thus far obtained by him, and has given me also the opportunity to examine the uteri and the microscopical sections which he made therefrom. The essential points of Dr. Boldt's researches thus far are "that we shall have to confine the term fungous endometritis to those cases in which there is present an augmentation of the lymph tissue of the uterine mucosa with a slight enlargement of the utricular glands—*i. e.*, a widening of their caliber *without any new formation of glandular structure.*" As soon as the latter feature can be established the term fungous endometritis ceases to be applicable, and in its place we must substitute the name lympho-adenoma, this term being used to designate a tumor composed of newly formed lymph tissue as well as glandular structures.

In Fig. 1 I have illustrated a case of pronounced lympho-adenoma where the uterus was removed by Dr. Boldt on account of repeated hæmorrhages. (See Fig. 1.)

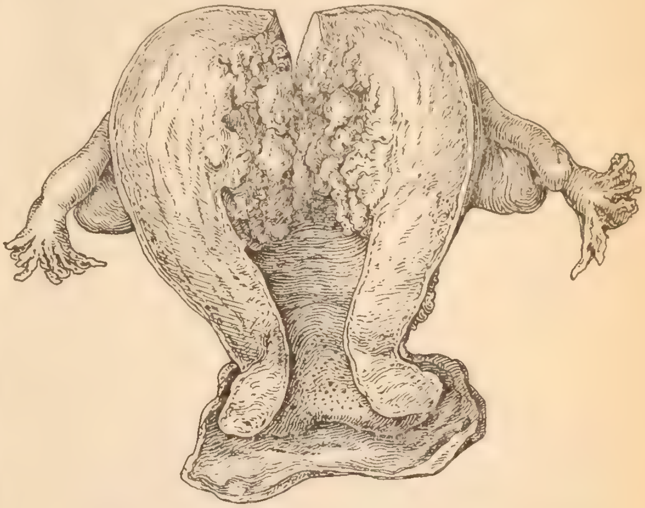

Fig. 1.—Lympho-adenoma of the mucosa uteri (Boldt), the fungous endometritis of authors.

Here we observe that the mucosa of the fundus uteri is considerably thickened, producing nodular elevations of considerable size. Microscopical examination has proved this case to be a pronounced "lympho-adenoma," the term suggested by Dr. Boldt.

The symptoms of the two diseases under consideration can not in every single instance be clinically differentiated, both pathological conditions being sometimes combined in one and the same uterus. The nodules produced by fungous endometritis are but *slightly elevated* above the surrounding surface, whereas those of lympho-adenoma are *markedly raised* above the surface of the mucosa. Bleeding is a symptom common to both diseases. With the microscope, however, the differential diagnosis is easy. Thus in the acute stage of fungous endometritis we find the lymph tissue augmented to such an extent that the myxomatous reticulum of this tissue is rendered almost invisible and seems to have disappeared. As soon as the stage of chronicity is reached the lymph corpuscles gradually diminish in numbers, thus causing the fibrous reticulum to become more conspicuous. The final result of this disease is atrophy of the mucosa; it becomes transformed into, primarily, a myxofibrous and afterward a fibrous connective tissue, at the same time the utricular glands being much diminished in number, or are found to be entirely absent in areas of considerable extent, many of them having been transformed into cysts. *At no time* have I seen *any new formation* of utricular glands. In lympho-adenoma, on the contrary, the lymph corpuscles, as a rule, are not augmented to any considerable extent at any stage of the disease, but the utricular glands are found to be very much increased in number, becoming at the same time tortuous, branching, and having their caliber partly narrowed or partly widened to a considerable extent, sometimes to a degree which makes the glandular structures appear far in excess of the lymph structures.

Fungous endometritis, like any other inflammatory process, will sooner or later come to a standstill, terminating at last in atrophy, while lympho-adenoma, being a type of tumor, is always progressive, endangering life by repeated hæmorrhages, although strictly benign in character from a pathological standpoint. It is evidently this disease which some pathologists have termed benign adenoma, although they admit that this form of adenoma is rather prone to become malignant and change into cancer.

In both fungous endometritis and lympho-adenoma the microscopical specimens show an unbroken wreath of columnar ciliated epithelia, forming the linings of the utricular glands. Sometimes this wreath is found interrupted, and replaced by globular elements, which have originated apparently from the epithelia themselves, and they not infrequently penetrate into the caliber of the gland, causing it to be distorted and more or less obliterated. In such cases neither of the previously mentioned diagnoses is applicable, but the nature of the originally benign tumor has changed into a malignant sarcoma (according to Virchow's nomenclature), or myeloma, which term I would prefer, it being more in accordance with modern pathology. The word sarcoma means a fleshy tumor, and is therefore inapplicable according to the latest pathological views. The term myeloma, on the other hand, means a medullary tumor—a tumor composed of indifferent embryonal or medullary elements, which, since the publication of Virchow's descriptions and researches, we know is the true histological structure of sarcoma. The first investigator who drew attention to these peculiar changes of the utricular glands was Louis Heitzmann in 1887.*

His discovery, however, seems to have attracted but little attention, since I have been unable to find any reference to it in the text-books. Only a few gynæcologists have, up to the present time, resorted to microscopical examination for the purpose of diagnosis, and, trusting the revelations of the microscope, have removed the uterus after the diagnosis of myeloma had been thus fully and certainly established. I have had several opportunities to examine such uteri after their removal by vaginal extirpation (one being a case of Dr. McDonald's, and the second one of my own operations). In these a thorough microscopical examination of the mucosa of the uterine cavity and the subjacent muscular tissue has verified the diagnosis of the microscopist, made from an examination of the gougings removed by the scoop previous to operation.

In further illustration, I have now in my possession the scrapings from the uteri of two other cases, in one of which (Dr. Mundé's) I am unable to give the further history of the case. The second is one of my own cases, and having only recently obtained the specimen, it is yet too early to report fully, as the patient is now waiting for operation.

The microscopical examination of tissue removed by the curette from the uterine cavity (in one of my cases, characterized by persistent hæmorrhage) is illustrated in Fig. 2, the drawing being made with a low power of the microscope. In this specimen it will be observed that there is no augmentation in number of the utricular glands; many show moderate widening of their caliber; some of the utricular glands have an entirely normal lining of columnar ciliated epithelia, the wreath being unbroken all around. Other utricular glands are made conspicuous by an augmentation in number of the nuclei of the epithelia, which epithelia also become *coarsely granular* in their appearance. In still other cases the epithelia have disappeared, and are replaced by globular protoplasmic bodies, still retaining the breadth of the epithelial wreath. In a further advanced stage the continuity of the epithelial wreath is lost, and the gland appears to be lined with globular bodies, varying greatly in size and shape without any regularity. In the most advanced stages of the epithelial changes even the lumen of the gland may appear obstructed and filled with globular bodies, only a vestige of the previous epithelia being recognizable. In all the stages just described both the epithelia and their derivations readily take up the ammoniacal carmin stain, thus affording an easy means of recognizing even the epithelial wreaths, which are here far advanced in the process of destruction. The image, even with so low a power as two hundred amplifications, is so plain and so distinctly marked that it will suffice to immediately suggest the conclusion

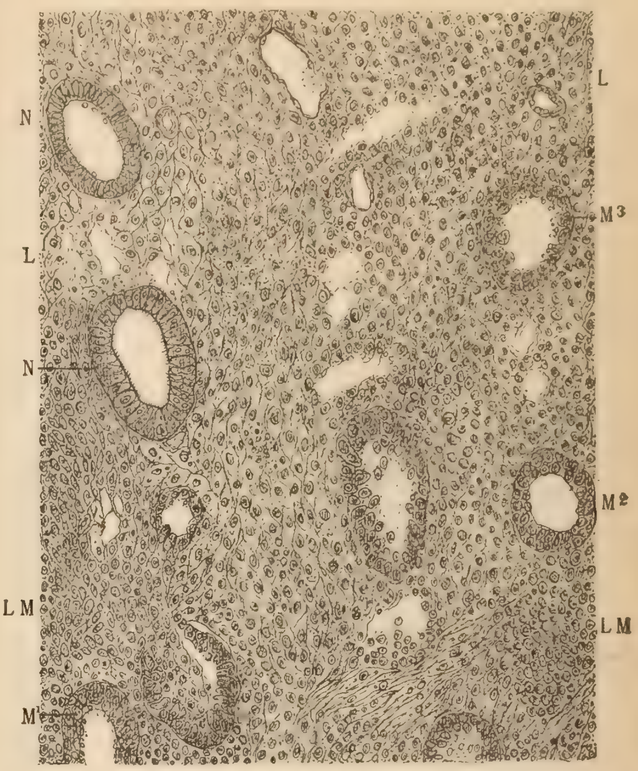

Fig. 2.—Transition of fungous endometritis into lympho-myeloma. ×200. N N, normal utricular glands in transverse section; M^1, incipient change of epithelia to myeloma; M^2, more advanced change of epithelia; M^3, epithelia completely broken up into myeloma tissue; L L, normal lymph tissue between the utricular glands; L M, lympho-myeloma.

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* The Differential Diagnosis between Fungous Endometritis and Tumors of the Mucosa of the Uterus. *Amer. Jour. of Obst. and Diseases of Women and Children.*

that a grave disease is threatening the patient, requiring the most energetic surgical treatment for its cure.

Medium powers of the microscope will more readily demonstrate these changes occurring in the epithelia. (See Fig. 3.)

I have in this figure selected for illustration the *earliest visible* changes in the epithelia. These changes consist in an increase in the refraction of the nuclei, most of which appear almost homogeneous and of a highly glossy appearance.

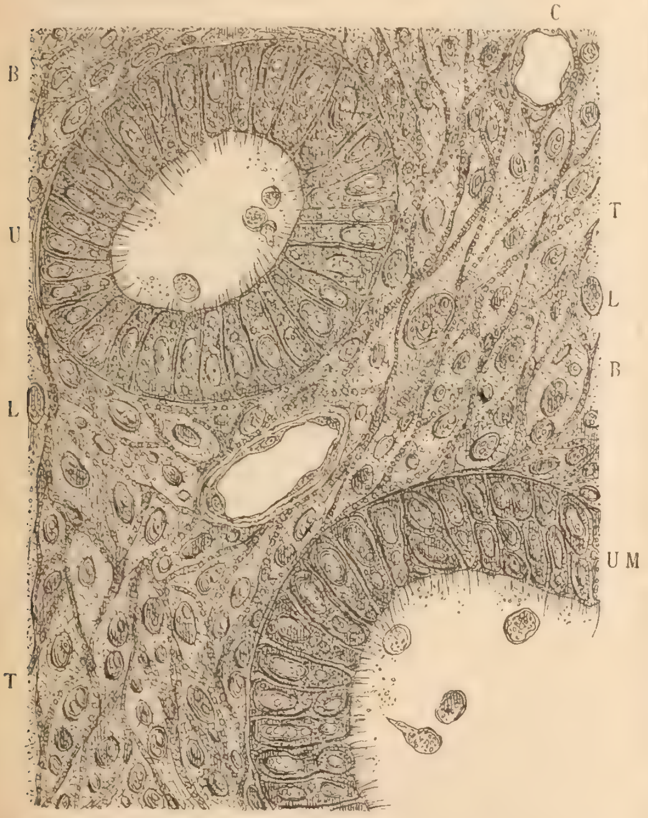

Fig. 3.—Incipient change of epithelia of utricular glands to myeloma. ×600. U, a utricular gland in transverse section, the epithelia coarsely granular, with enlarged, almost homogeneous nuclei; U M, beginning division of epithelia into myeloma corpuscles; T T, protoplasmic and fibrous trabeculæ of myxomatous lymph tissue; L L, lymph corpuscles in the meshes of the lymph tissue; C, a capillary blood-vessel in transverse section.

Their structure is permeated with vacuoles or is coarsely reticulated. The protoplasm of the epithelia is likewise coarsely granular and densely reticulated. I admit here that if we were unable to discover other changes than those just described we would not be justified in making a positive diagnosis of myeloma; it is only the *next* stage that enables us to establish fully a diagnosis—*i. e.*, the breaking up of the epithelia into oblong or globular bodies, such as are represented in the segment of the utricular gland, drawn in the lower portion of the figure we are now describing. Both the size and the gloss of the nuclei here appear increased, and at the same time a splitting up of the epithelia into segments has taken place, each segment being possessed of a nucleus. Such an image as we have just described is *never* seen in normal utricular glands, and when once recognized it enables us to diagnose with certainty a proliferation due to an incipient malignant growth.

The lymph tissue is augmented in this instance only in comparatively small patches. It is noteworthy that in many instances these changes in the epithelia precede those in the lymph tissue; in fact, the lymph corpuscles are in this case so slightly augmented in number and size that we may safely exclude fungous endometritis from our diagnosis and say that here a fairly normal mucosa begins to become affected by a malignant growth (incipient myeloma). The epithelia, though changed in appearance, still remain ciliated; and here also in the caliber of the utricular glands we notice, aside from a varying amount of coagulated albumin, finely granular corpuscles of different sizes and shapes, which are nothing but mucous corpuscles, such as we meet with even in normal utricular glands.

The case just described was Dr. Mundé's, the subsequent history of which I have not been able to obtain. The next specimen is that taken from Dr. McDonald's case and is certainly further advanced in malignancy than that of Dr. Mundé's. (See Fig. 4.)

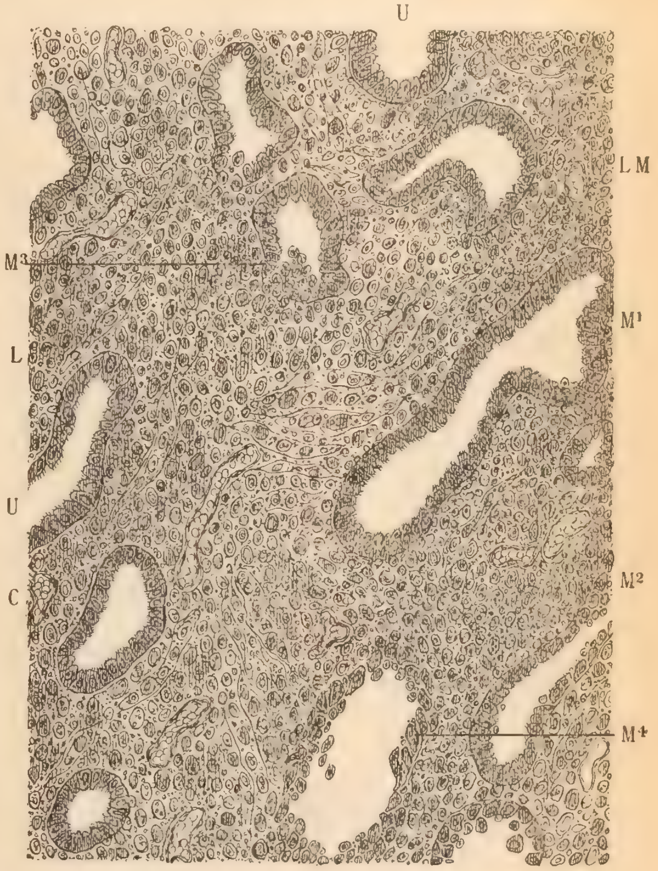

Fig. 4.—Lympho-adenoma changing to lympho-myeloma. ×200. U U, newly formed utricular glands lined with epithelia not much changed; M^1, a utricular gland with incipient changes; M^2, a utricular gland with more advanced changes; M^3, partial transformation of epithelia into myeloma elements, the latter penetrating the caliber; M^4, complete transformation of epithelia into myeloma elements; L, lymph tissue; L M, lympho-myeloma tissue; C C, capillary blood-vessels.

Here we notice a considerable increase in the size and the number of the utricular glands, their caliber being tortuous, a portion being either narrowed or dilated; we further notice that there are comparatively few utricular glands with *unbroken epithelia*, and even these are conspicuous because of their large-sized columnar epithelia.

They are therefore in the condition termed hyperplastic. The epithelia lining most of the utricular glands we notice have become coarsely granular, and here and there we see them beginning to break up into smaller protoplasmic bodies. Of special interest in this figure is the tranverse section of the utricular gland marked M^3. The lower segment of the epithelial wreath is completely lost and replaced by globular bodies which penetrate into the caliber and cause an irregular appearance of the latter. In the most advanced stage of the epithelial changes the columnar form of the epithelia is but exceptionally seen within the epithelial wreaths, most of the epithelia being transformed into globular or irregularly shaped protoplasmic bodies. The lymph corpuscles are everywhere numerous and of more than medium size, having increased in number and size to such an extent that the diagnosis of lympho-adenoma can readily be established, it being the forerunner of changes toward malignancy.

That this in reality is the case can be proved by higher powers of the microscope. (See Fig. 5.)

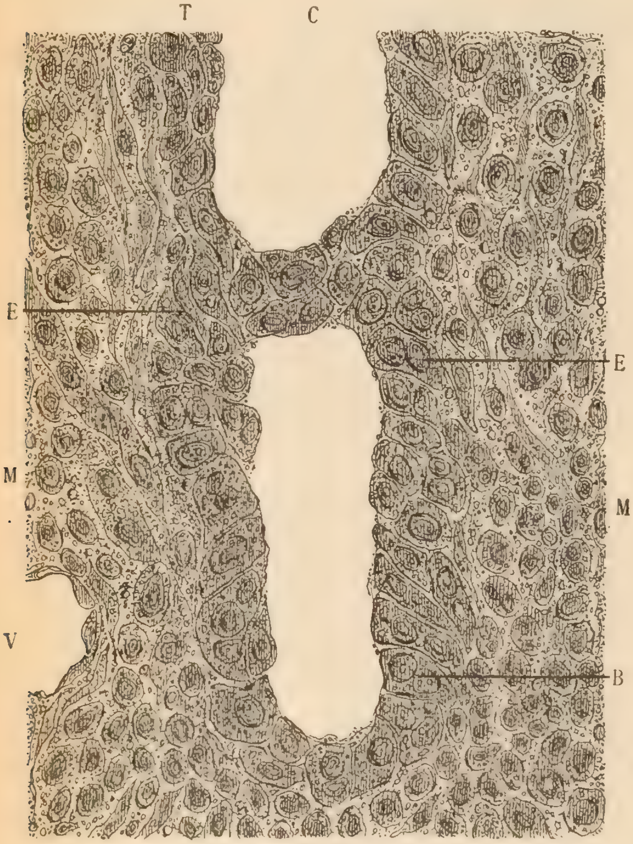

Fig. 5.—Transformation of epithelia of utricular glands into myeloma corpuscles. ×600. E E, still recognizable columnar epithelia of a utricular gland; B, beginning changes toward the formation of myeloma; T, accomplished transformation of epithelia to myeloma corpuscles; C, caliber of a utricular gland; M M, globo-myeloma; V, a wide capillary blood-vessel.

This figure illustrates an oblique section of a utricular gland, which, being tortuous, shows a sæptum through its caliber which is nothing but a segment of the wall of the epithelial lining cut obliquely. In the wreath forming the wall of the utricular gland there are but a few columnar epithelia, and these are destitute of cilia. The vast majority are transformed either into multinuclear protoplasmic bodies or are broken up into protoplasmic lumps, each of which holds at least one nucleus or quite frequently two nuclei. These protoplasmic bodies are coarsely granular and have in some instances split up into still smaller bodies, not surpassing in size those met with in the adjacent lymph tissue. In the latter we meet with corpuscles greatly varying in size. The smallest are homogeneous, apparently devoid of structure. Somewhat larger corpuscles exhibit vacuoles in their interior, and the largest are nucleated and of a reticular structure. Even to an experienced microscopist it would be impossible to establish the nature of the interstitial tissue and to distinguish between a benign-lymph tissue and that of a malignant lympho-myeloma (formerly known as small round-celled sarcoma), whereas the *epithelial changes* enable us to establish positively the presence of the latter—viz., lympho-myeloma.

The extirpated uterus in this case was examined and a mass of lympho-myeloma found at the fundus uteri which was fully two inches in diameter; it invaded mainly the mucosa and only to a slight extent the subjacent muscles.

The third case of my observation is that of one of my own patients. The woman was about forty years of age, having been curetted by me on account of persistent metrorrhagia, and the shreds of curetted tissue, when examined microscopically, showed conclusively the existence of incipient myeloma. Having thus established by the microscope the exact diagnosis, I immediately performed vaginal hysterectomy. This was over a year ago, and the woman ever since has been in perfect health. The image with *low powers* of the microscope closely resembled that of the second case just described; hence I have abstained from making another drawing.

The next drawing made with a *higher power* of the microscope is taken from the excised uterus near the *cul-de-sac* of a utricular gland, being that portion which is imbedded in the muscle coat of the uterus. (See Fig. 6.)

Here it will be observed that the changes in the columnar ciliated epithelium of the utricular gland are similar to those which have been described in the previous cases. The most noticeable feature to be observed here is that the surrounding smooth muscle tissue is in the process of transformation into lympho-myeloma, a certain proof of the malignant nature of the disease. We see some of the spindles of the smooth muscle fibers supplied with two nuclei instead of the one rod-like nucleus present in a normal condition; further on the spindle divides into halves, and finally is completely broken up into small globular or oblong bodies, such as we consider typical of lympho-myeloma, or small round celled sarcoma. The invasion of the malignant disease has just begun in the muscle layers; this early stage affords the most favorable chance for operation and for the complete recovery of the patient.

In a fourth case, which is now under my observation, the microscope revealed in the scrapings of curetted tissue a combination of globo-myeloma with lympho-myeloma, or, according to Virchow's nomenclature, a combination of large round-celled with small-celled sarcoma. The changes in the columnar epithelia of the utricular glands are the same whether the infiltration in the interstitial tissue be made up of large or of small myeloma elements.

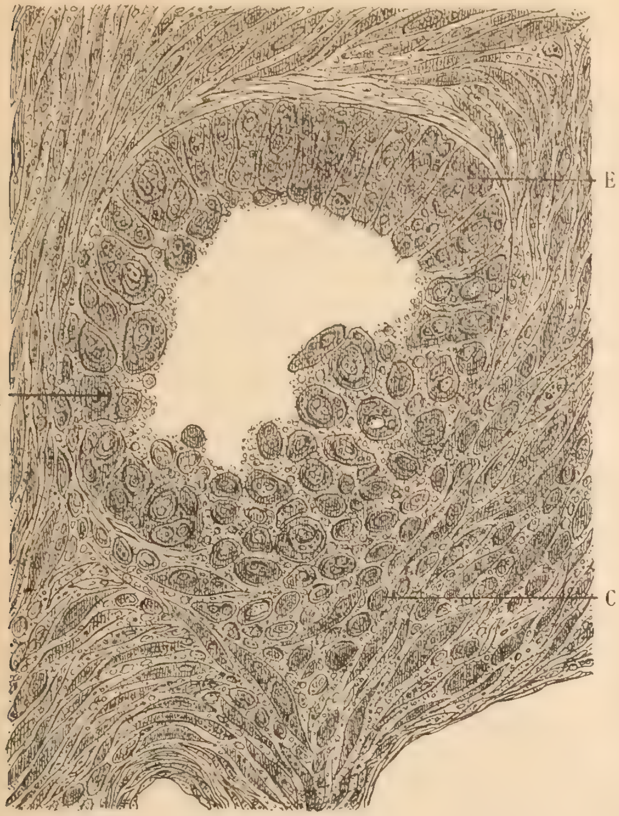

Fig. 6.—The breaking up of columnar epithelia of a utricular gland and adjacent smooth muscle-fibers into myeloma tissue. ×600. E, columnar ciliated epithelia coarsely granular; M, epithelia broken up into myeloma corpuscles; S S, smooth muscle-fibers unchanged; C S, smooth muscle-fibers transformed into rows of myeloma corpuscles.

Maintaining, as I do, that a direct transition occurs of epithelia into myeloma tissue, I am aware of the probability of some objections on the part of most modern pathologists who consider epithelium to be a derivation of the epiblast and mesoblast, and a tissue of a typical character, which they do not admit can be transformed into connective tissue, the latter being derived solely from the mesoblast. Myeloma (or sarcoma) is nowadays admitted to be a strictly connective-tissue growth ever since Virchow, thirty-five years ago, established its histological nature. The objection advanced is a merely theoretical one, and must prove futile in the face of the fact that in other interstitial inflammations occurring in glandular organs the epithelium has been proved to *perish by being transformed into fibrous connective tissue.* This change has been demonstrated in chronic hepatitis, chronic nephritis, chronic orchitis and epididymitis, and pulmonary cirrhosis. A transformation of epithelial tissue into myeloma occurring in the Fallopian tube has likewise been demonstrated. I am thoroughly convinced of the possibility of such a change, and I am supported in this assertion by no less an authority than Professor Rabl, of Prague, who has shown that all tissues of the organism, including connective tissue, are derived from original epithelia, and also their products—the ovum and the spermatozooid.

My observations have proved, moreover, the correctness of the assertion "that the epithelia of the utricular glands are transformed into myeloma elements" at the beginning of this malignant disease. This is readily recognized under the microscope, and its early diagnosis enables the surgeon to save the patient's life by vaginal hysterectomy or extirpation. Otherwise the myeloma will rapidly spread beyond the limits of the mucosa, involving fatally other structures. In a paper published during the present year Dr. Mary A. Dixon Jones has fully demonstrated the curability of malignant growths in the early stage of the disease.*

A PECULIAR CASE OF FOREIGN BODY IN THE RECTUM.

By T. W. JENKINS, M. D.,
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Mr. J. M., aged thirty-three years, single, native of the United States, by occupation a farmer, presented himself at the Albany Hospital, Albany, N. Y., on March 1, 1894, giving the following history: While walking along the railroad between Melrose and Schaghticoke, he was attacked by four tramps and robbed of $12. Mr. M., having some loose change, threw it into the snow to prevent the tramps obtaining all he had. Whereupon the tramps became enraged, knocked him down, and forced a turnip and a potato up his rectum. This prevented Mr. M. from following the tramps, as he had to apply for immediate relief. He consulted his family physician, who, after some ineffectual attempts at removing the articles, advised him to go to some hospital, when he immediately came to the Albany Hospital. Digital examination revealed a foreign body about four inches from the anus. A speculum was introduced and the body could be readily seen. A volsella forceps was inserted into it and it was brought down to the sphincter, which contracted so strongly that it prevented its being withdrawn. The patient was then etherized and two fingers were inserted into the rectum and alongside the foreign body, abdominal pressure being used to prevent the body slipping farther up the rectum. By these means it was brought down to the anus, and, after three volsella forceps had been fastened into it, it was withdrawn. The arrangement of the turnip and potato was unique, and a description of it will not, I trust, be amiss. The large end of the turnip was hollowed out and a hole bored through the root. A hole was also bored through the potato, and a stout string passed through it and through the turnip. The potato was thus pulled down into the turnip and the string cut off short. The dimensions of the bulk were ten inches and a half in its bipolar circumference and it was eight inches round. It had been introduced large end first. The patient was put to bed for the night, and went away quite comfortable in the morning.

March 4, 1894.

The University of Pennsylvania.—It is announced that Dr. William Pepper has resigned the office of provost, which he has held for many years to the incalculable advantage of the University, and that he has made a donation of $50,000 to the institution. It is stated that he will retain his professorship of medicine.

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* Carcinoma on the Floor of the Pelvis., *Medical Record;* and Colpo-hysterectomy for Malignant Disease, *Am. Jour. of Obstet.*, vol. xxvii, No. 5, 1893.

THE
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NEW YORK, SATURDAY, APRIL 28, 1894.

THE USE OF ORGANIC EXTRACTS AND JUICES IN THE TREATMENT OF DISEASE.

In the April number of the *Dublin Journal of Medical Science* Dr. James Little gives the ulterior history of a case of myxœdema treated with thyreoid juice. The patient was an unmarried woman, thirty-four years old, who first consulted him on December 11, 1890. In the autumn of 1886 she had noticed that she had difficulty in kneeling; then her ankles had become stiff, and that when she walked they became swollen. When the author first saw her, she presented the typical symptoms and signs of myxœdema. Her family noticed that she was taciturn and indisposed to exertion, and she herself said that she felt stupid. Her entire body had become enlarged, her neck was full, and her abdomen was so prominent that the author was asked to examine her in bed, as her mother could not believe that the patient was not suffering from a tumor. Her face seemed swollen and had at once a pale and a livid look. Her fingers had become clumsy, and she felt the cold excessively; occasionally she was hoarse. Her tongue was large and pale, her appetite was good, but she often felt distended after taking food, and her bowels were constipated. Her menstruation was excessive, and in the intervals she suffered from leucorrhœa. Her pulse was 68, and the cardiac sounds were short and sharp. There was no hum in the veins of the neck or in the pulmonary area. Neither she nor her family had noticed any change in her condition for the preceding two years.

The author advised the lady to take Turkish baths, and prescribed tincture of jaborandi, in half-drachm doses, three times a day. Eighteen months afterward, in July, 1892, she seemed a little better. She was less stupid and her face was less swollen, but there was no material change. In November she still thought herself a little better, but members of her family thought that in this she was deceived. On December 4th the first injection of thyreoid juice was given, and its administration was continued until January 9th. Altogether she had twenty-six injections; at first two each week, afterward three a week. Except on one occasion, when two syringefuls of the fluid were injected, there never was the slightest local heat or feverish disturbance, and generally the patient got up and went about as usual in the course of an hour. After the first few injections, in which there had been difficulty in pinching up the skin, it was found that this was changed—the skin could be pinched up with ease, and the alteration in the patient's whole appearance was very striking; she took part in conversation as she had not done for years, and felt lively and active. Her joints had become so supple that she could again use the needle with neatness; she was no longer unnaturally sensitive to cold, her hands and feet were warm, and her breath was free from fœtor. Her face corresponded entirely to a photograph taken before she had lost her health, and she told the author that certain black horny masses which had existed on her knees had disappeared during the treatment, also that on her head and the nape of her neck, where her hair had become thin and poor, a new growth was appearing. She was then advised to take a Turkish bath twice a week, with thorough rubbing, and to take strychnine twice a day. In the beginning of March, however, just two months after the use of the injection had been discontinued, it was noticed by the patient's family that some of her symptoms were reappearing; her face had become a little dry, pale, and puffy, and her voice a little hoarse, she felt shaky about the knees, her lower lip turned out when she spoke, and the fullness of her abdomen, which had almost disappeared, was again noticeable. She was now advised to take a preparation of the thyreoid gland by the mouth, and she had continued to do so up to the time that Dr. Little made his report, before the Section in Medicine of the Royal Academy of Medicine in Ireland, on March 2, 1894. The family butcher supplied her with fresh thyreoid glands. Every week she used two glands—half a one, for example, on Monday and the other half on Tuesday, and again half a one on Thursday and the other half on Friday. She chopped up half a gland, removed the fat and capsule from it, moistened the residue in a spoon, and swallowed it after her breakfast. She also took strychnine. At the time the author made his report she was looking and feeling in every way as well as before the myxœdema had begun.

In the February number of the *Australian Medical Journal* there is a report of a meeting of the Medical Society of Victoria at which Dr. W. Atkinson Wood showed a patient with locomotor ataxia whom he had been treating with injections of testicle juice for five months. He thought the patient had shown notable improvement. In the discussion Dr. Grant said that the marvelous results of thyreoid feeding and thyreoid injections in myxœdema and sporadic cretinism naturally made one hesitate to set arbitrary bounds to the possible powers of organic extracts in the cure of disease, but it seemed fairly safe to take the most skeptical position in regard to the cure and arrest of such a disease as locomotor ataxia with the extract of an organ so apparently irrelevant as the testicle. The obvious implication, he said, if the analogy with the case of the thyreoid was to hold good, would be that the nutrition of the spinal cord, and especially of its posterior columns, was in some way specially dependent on the presence in the blood of some secretion of the testicle, and, to complete the analogy, it would be necessary to find some plausible evidence that the disease was primarily due to a suspension of this function of the testicle. Such an analogy, if it could be established, would further imply that removal of the testicle ought to be followed by the occurrence of what might then be called "tabes testipriva," just as removal of the thyreoid produced cachexia strumipriva. If such a relationship existed, surely the innumerable cases of castration, both in men and in the domestic animals, should have occasioned a sufficient number of ataxics to draw attention to the point. The speaker feared that, so far as locomotor ataxia was concerned, the Brown-Séquard injections must be placed among other therapeutic measures which operated simply by suggestion.

In the *British Medical Journal* for April 14th there is an account of two cases of lupus, each involving terrible disfigurement of the face, in which very decided improvement followed thyreoid feeding. The treatment was carried out under the supervision of Dr. Byrom Bramwell, of the Edinburgh Royal Infirmary. Dr. Bramwell explains that a remarkable improvement in the nutrition of the skin which the remedy produced in the first case of myxœdema in which he used it gave him the idea that it might prove beneficial in some skin diseases. He tried it in psoriasis, and in the first case there was rapid and decided benefit. He then suggested that thyreoid feeding might be of service in ichthyosis, exfoliative dermatitis, and some other skin diseases. Now, on the strength of what it has accomplished in these two cases of actively spreading lupus, he speaks of the possibility of its being useful in internal tuberculosis, in leprosy, and even in cancer.

In an editorial article in the same number of the *British Medical Journal* the remark is made that the remedial effects of thyreoid feeding can not be wholly explained on the theory that it supplies to the system something that it is the function of the thyreoid gland to elaborate, unless, indeed, we assume its function to be far more diversified than there has hitherto been any warrant for our supposing; and the suggestion is put forth that the gland may act as a veritable drug. This notion seems to us to be supported by its occasional depressing action on the heart and the fatal effects that have ensued in some instances.

Surely, to use Dr. Grant's expression, the thyreoid gland is quite as "irrelevant" to the various trophoneuroses of the skin as the testicle is to locomotor ataxia. It is evident that we know very little about the *methodus medendi* of animal extracts and juices.

MINOR PARAGRAPHS.

DR. BROWN-SÉQUARD'S AMERICAN JOURNAL.

In our last issue we called attention to an erroneous statement made by the *British Medical Journal* to the effect that during the late Professor Brown-Séquard's residence in New York he established a journal with a French name. We now learn from an esteemed correspondent that we also were in error in stating that the name of the journal was the *Archives of Medicine.* It seems that the name was the *Archives of Scientific and Practical Medicine.* The *Archives of Medicine* was subsequently founded by Dr. Edward C. Seguin, who had been associated with Dr. Brown-Séquard in the conduct of the journal with the ampler title.

ACQUA DI PERUGIA.

This once dreaded poison is generally supposed to have been very similar to the *acqua Tofana* of ghastly memory, but the author of a series of articles on Famous Poisoners in Fiction, now running through the English periodical called the *Hospital,* states that it is said to have been prepared by killing a pig, disjointing it, and preparing it as for cooking, only using arsenic instead of salt. The juice or gravy from a pig thus treated is, he adds, far more poisonous than arsenic in its ordinary forms, but he gives no reason why it should be.

A PROPOSAL TO VIVISECT CRIMINALS.

There would be no occasion for us to comment upon such a proposal, which was the gist of a paper recently read before a medical society, had the matter not found its way into the newspapers. There is danger from this occurrence that a portion of the public may infer that the move is sanctioned if not supported by the medical profession. This we do not believe to be the case. At any rate, the proposal is abhorrent to us.

DULCIN.

The German journal of nursing (*Zeitschrift für Krankenpflege*) says that this new sweetening product is two hundred times as sweet as sugar, but it warns its readers against its use, citing Aldehoff's experiments on animals, in which grave symptoms of poisoning were observed.

ITEMS, ETC.

The Methodist Episcopal Hospital of Philadelphia.—An examination for two resident physicians will be held on Thursday, May 3d, at 7.30 p. m., at the hospital, Broad and Wolf Streets. One of the officers thus selected will go on duty on August 1st and serve twelve months. The other will go on duty on September 1st and serve thirteen months. In accordance with the charter of the hospital applicants must have the degree of bachelor of arts in addition to that of doctor of medicine. Further information may be obtained from Dr. John B. Roberts, chairman of the committee on examinations, 1627 Walnut Street, Philadelphia.

The New York Neurological Society.—At the meeting of April 3d officers for the ensuing year were elected as follows: President, Dr. E. D. Fisher; vice-presidents, Dr. C. A. Herter and Dr. W. M. Leszynsky; secretary, Dr. Frederick Peterson; corresponding secretary, Dr. Mary Putnam Jacobi; treasurer, Dr. Græme M. Hammond.

The Alumni Association of the New York Hospital had its annual dinner at the Marlborough Hotel on Monday evening, the 23d inst.

The Alumni Association of the Bellevue Hospital Medical College will have its annual dinner at the Windsor Hotel on Tuesday evening, May 1st.

The Brooklyn Naval Hospital.—It is announced, but not authoritatively, that this hospital is soon to be greatly enlarged and modernized, and it is said to be the surgeon general's conviction that he will be able to make it one of the finest naval hospitals in the world.

Changes of Address.—Dr. Mary E. Hennessy, to No. 20 East Twenty-ninth Street; Dr. H. Illoway, from Cincinnati to No. 1138 Madison Avenue, New York; Dr. Albert H. Buck, to No. 14 East Forty-fifth Street; Dr. Robert Lewis, Jr., to No. 14 East Forty-fifth Street.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 15 to April 21, 1894:*

Jarvis, Nathan S., Captain and Assistant Surgeon, will be relieved from duty at David's Island, New York, upon the arrival of Robinson, Samuel Q., Captain and Assistant Surgeon, and will report in person to the commanding officer, Willett's Point, New York, for duty, relieving Kendall, William P., Captain and Assistant Surgeon. Captain Kendall, upon being so relieved, will report in person for duty at Fort Columbus, New York.

Smith, Allen M., First Lieutenant and Assistant Surgeon, will be relieved from duty at Fort Custer, Montana, at the expiration of his present leave of absence, and will report in person to the commanding officer, Fort Reno, Oklahoma Territory, for duty at that post.

Kennedy, James M., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Riley, Kansas, and ordered to Fort Custer, Montana, for duty.

Chapin, Alonzo R., Captain and Assistant Surgeon, will, by direction of the President, report in person to the President of the Army, Retiring Board at Fort Bliss, Texas, for examination by the board.

Rafferty, Ogden, Captain and Assistant Surgeon. The leave of absence granted is extended eighteen days.

Willcox, Charles, First Lieutenant and Assistant Surgeon, is relieved from temporary duty at Angel Island, California, and will rejoin his proper station The Presidio of San Francisco, Cal.

Promotion.

Merrill, James C., Captain and Assistant Surgeon, to be surgeon with the rank of major, March 13, 1894, vice Bartholf, retired from active service.

Society Meetings for the Coming Week:

Tuesday, *May 1st:* Association of Military Surgeons of the United States (first day—Washington); New York Neurological Society; New Yor Obstetrical Society (private); Buffalo Medical and Surgical Association; Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson, N. J. (annual—Jersey City), and Mercer, N. J. (annual), County Medical Societies; Androscoggin, Me., County Medical Association (annual); Connecticut River Valley Medical Association (Bellows Falls, Vt.); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *May 2d:* Association of Military Surgeons of the United States (second day); Harlem Medical Association of the City of New York; Society of the Alumni of Bellevue Hospital; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Essex, Mass., North District Medical Society (annual—Haverhill); Plymouth, Mass., District Medical Society (annual); Bridgeport, Conn., Medical Association.

Thursday, *May 3d:* Association of Military Surgeons of the United States (third day); New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Medical Society of the County of Orleans (semi-annual—Albion), N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Ocean, N. J., County Medical Society (Tom's River).

Friday, *May 4th:* Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *May 5th:* Clinical Society of the New York Postgraduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Letters to the Editor.

THE TREATMENT OF SMALL-POX.

Aurora, Ill., *April 19, 1894.*

To the Editor of the New York Medical Journal:

Sir: I have just finished the reading of Dr. Welch's statistical report on small-pox. The results to the unvaccinated there shown are so terrific that any suggestion which bids fair to lessen the fearful mortality might well receive careful consideration.

The question in my mind is, Can small-pox be aborted? My experience has been very limited, and consequently may not amount to much; but, such as it is, I give it with the hope that others of wider opportunities may put it to a more extended test.

Somewhat over a year ago I treated three cases, all in children, the oldest aged eight years, the second, six years, and the third an infant of seven or eight months, at the breast. They were all perfectly regular in their development. They were discrete; the pocks on the face and lower third of the forearms and hands of the oldest, and of the babe, stood as close as they could, and a few were confluent. At their height they were globular with an inflammatory margin. They all aborted when about to pass into the stage of pustulation, the vesicles drying up, forming light scabs which dropped off in a few days without leaving any scars.

In the first, the oldest, the disease was unmodified, the two others I had vaccinated, and they had well-developed vesicles—the babe three—when the small-pox eruption came out. The vaccination had apparently no effect on the primary fever or on the eruption. In only one, the oldest, was there any reaction of maturation, and that involving a rise of temperature of only about one degree for one day. The whole course was less than two weeks in each case.

Being withoet experience, the treatment was entirely theoretical or empirical. It consisted of cream-of-tartar water as a diuretic; a grain or two of acetanilide or mixed cinchona salts every fourth hour, and a quarter to half a grain of sulphide of calcium every fourth hour, internally. Externally, carbolate-of-camphor ointment, on a mask to the face, on a bandage to the arms and legs, and by inunction to the body. This ointment consisted of a mixture of one part of crystallized carbolic acid and three parts of camphor with from three to five parts of vaseline.

The ointment relieved the itching at once, and made the patients comfortable.

The virtue, if there was any, in the treatment was due, in my opinion, to the sulphide of calcium and to the ointment, both of which exercise a powerful influence in preventing the formation of pus. Thomas A. Elder, M. D.

Proceedings of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of Tuesday, April 3, 1894.

The President, Dr. M. Allen Starr, in the Chair.

Amyotrophic Lateral Sclerosis.—Dr. Charles H. Brown presented a boy, aged fifteen, who two years and a half befor had begun to notice first a loss of proper speech and difficulty in whistling and in moving the tongue. These symptoms had rapidly been followed by difficulty in deglutition, closing of the eyes, deafness, and inability to move the facial muscles. After a few weeks he had been unable to use the fingers freely in buttoning and unbuttoning his clothing. At present the patient was extremely emaciated. There was paralysis of the seventh nerve on each side, also the "tapir" mouth. There was trophic degeneration in the muscles of the face and neck. The tongue was very much atrophied. The larynx was distorted. He presented all the symptoms of nuclear implication of the bulb and there was glosso-labio-laryngeal paralysis. There was atrophy of numerous muscles in the upper extremity and of a few in the lower extremity. There were general fine and coarse fibrillary twitchings all over the body, with exaggeration of the superficial and deep reflexes and slight tonic and spastic action in the movement of many muscles.

Progressive Muscular Dystrophy.—Dr. Alfred Wiener presented a man aged twenty years. He had been in good health up to May, 1893, when he had begun to suffer considerable pain in the region of the liver and spleen. This was most severe on walking. Soon afterward he had begun to experience difficulty in going up-stairs, and had noticed that he was growing very much thinner. His weakness had at first been confined to the muscles about the thigh; from here it had spread up along the back and involved the muscles of the neck and shoulders. There had been no vesical or rectal trouble. There was no history of alcoholism or syphilis.

The patient's present condition was as follows: There were no mental symptoms. The voice and speech appeared to be normal. He was very much emaciated, especially in the neighborhood of the shoulders, back, and thighs. He assumed the position of one with a marked lordosis, and walked with a waddling gait. On lying down, it was impossible for him to turn over or lift his head from the pillow. His muscles were soft and flabby to the touch. There were no contractures or fibrillary twitchings, and there were no vaso-motor or trophic disturbances. The thoracic and abdominal organs appeared to be in perfect condition. There was present no pseudo-hypertrophy in any of the lower muscles, and the patient did not give a history of any having existed. The deep reflexes were all much diminished. The nerves were not painful to pressure, and there was no special tenderness. The lordosis was due to the paresis of the muscles of the back.

Dr. Joseph Collins said that the case presented by Dr. Brown was very similar to one under his observation at the present time, except that his patient was a man, thirty-four years old, in whom the symptoms had come on rapidly about six months before. It was very uncommon to see the disease at such an early age as that of Dr. Brown's patient, but he thought that cases showing the occurrence of the disease at even a tenderer age had been recorded. The involvement of the fifth nerve that Dr. Brown's patient seemed to present he had never before heard of. The case of the patient presented by Dr. Wiener seemed to be a typical one of muscular dystrophy, and one in which the pathognomonic symptoms were in marked contrast to the case of amyotrophic lateral sclerosis shown by Dr. Brown.

The President said that the contrast between the cases shown by Dr. Brown and Dr. Wiener was interesting; one presented the typical features of amyotrophic lateral sclerosis—namely, atrophy, fibrillary twitchings, increased reflexes, and bulbar invasion; the other showed a pure dystrophy, without twitching and without marked change of reflexes.

Dr. E. D. Fisher said the cases presented by Dr. Brown and Dr. Wiener represented two distinct classes of diseases. The first showed apparently a rare condition in which an inflammation had affected the bulb and subsequently the anterior horns in the cervical region, with involvement of the lateral columns. In other words, there was amyotrophic lateral sclerosis with bulbar symptoms. The usual and not uncommon order of sequence was that of involvement of the cord, with subsequent extension to the medulla. The speaker said that a patient recently under his observation, aged twenty, had presented bulbar symptoms of rather acute onset, and death had resulted suddenly, probably from some involvement of the respiratory center in the medulla. The autopsy had revealed softening in the region of the glosso-pharyngeal and pneumogastric neuclei. That case would probably have presented a similar clinical history if the patient had lived.

Dr. B. Sachs said he agreed to the diagnosis of amyotrophic lateral sclerosis in Dr. Brown's case. Dr. Wiener's case had undoubtedly been one of progressive muscular dystrophy.

Dr. William M. Leszynsky called attention to the fact that in Dr. Wiener's case the upper part of the trapezius muscle was atrophied, while the lower part had escaped. This partial atrophy, he said, usually occurred in progressive muscular atrophy of spinal origin.

Dr. Sachs said that the partial atrophy of muscles might also occur in spinal dystrophies.

The President said that in three cases of amyotrophic lateral sclerosis that had come under his observation the bulbar symptoms had been very prominent.

Dr. Sachs expressed the opinion that the bulbar symptoms in amyotrophic lateral sclerosis were due to a natural extension of the disease upward. He inquired whether there had been any involvement of the eye in these cases.

Dr. Brown said there might be ophthalmoplegia.

Dr. Landon Carter Gray said he had seen the eye involved in one case.

Dr. Brown said he had presented his case as a typical one of amyotrophic lateral sclerosis, but rare in the fact that it had begun in the bulb and extended downward. He thought this type of nuclear trophic and motor disorder was somewhat acute in its manifestations and ran its course rapidly. He considered that his case was *in statu quo*, and would progress no further, so far as degeneration of muscles was concerned. The boy presented a typical picture of a glosso-labio-laryngeal paralysis, which was an extremely rare condition in childhood. The fibrillary twitchings, the slight spastic actions, and the increase of the reflexes undoubtedly contributed to the picture of a lateral sclerosis.

The President exhibited a diagram showing the areas of anæsthesia in the arms as the result of lesions involving different segments of the cervical and dorsal portions of the spinal cord. This diagram, he said, was the result of a careful study of a large number of cases in which the spinal cord had been involved. The result seemed to show that for each segment of the cord there was an area of the skin which became anæsthetic when that segment was involved.

A Critical Review of the Various Theories of Uræmia, based upon Original Experimental Observations.—Dr. C. A. Herter read a paper with this title. He began by stating that few subjects of a medical nature had received more attention at the hand of clinicians and investigators than uræmia. Yet at the present time there was an uncertainty as to the nature of the uræmic state that was discouraging both to the student of pathology and to the practitioner who sought to understand the conditions he was called upon to treat.

Dr. Herter first gave a brief historical sketch of the growth of opinion regarding the nature of uræmia, and then reviewed in detail the various theories that had been advanced. The first one taken up was that known as the mechanical theory of uræmia, which had its chief basis in the clinical and post-mortem studies of Traube, who had been impressed with the facts that in many cases of Bright's disease the blood was impoverished in its corpuscular and proteid elements, the left ventricle was hypertrophied, and the arterial tension was greatly increased. The hydræmia, combined with high arterial tension, was supposed to account for the cerebral œdema found at autopsy. The uræmic symptoms Traube referred, not to cerebral œdema, but to the anæmia of the brain resulting from the pressure exerted by this œdema. There were objections to this theory. In the first place, œdema of the brain was present in only a small proportion of cases where there had been unequivocal symptoms of uræmia during life. There had been many cases of kidney disease with no hydræmia, no cardiac hypertrophy, and no increase of arterial tension; yet even when these latter conditions were present, there was usually no œdema of the brain. In the second place, œdema of the brain was found in conditions where Bright's disease was absent, and there were no symptoms of uræmia. Then again, drugs which produced convulsions might produce cerebral œdema, and it was likely that the œdema of the brain seen in uræmics was often the consequence rather than the cause of the convulsions. A further objection to the mechanical theory was that lowering of the arterial tension, where it was high, did not necessarily relieve the uræmic symptoms. The dyspnœa of Bright's disease was often thus relieved, but usually the convulsions were not. Bleeding frequently stopped the latter, but it checked them often also where there was no excess of tension. The effects of bleeding could not be used as an argument in favor of Traube's theory, because it might be alleged that the bleeding relieved the circulation of poisonous substances.

The carbonate-of-ammonium theory had been advanced by Frerichs, and was based upon the following propositions:

1. It was a well-known property of urea to be readily transformed under favorable circumstances into ammonium carbonate.

2. Carbonate of ammonium could always be detected by chemical means in the blood of uræmic patients.

3. The injection of ammonium carbonate into the blood of animals gave rise to the symptoms of uræmia.

The fate of Frerichs's theory hung on his second proposition—namely, that the blood of uræmics always contained ammonium carbonate. From numerous experiments made by Gobee, Oppler, Zalewsky, and others, including the author, the following conclusions might be drawn: 1. That no ammonium carbonate, or only a small amount, was found in the blood of uræmic persons. 2. That amounts of ammonium carbonate far smaller than the quantity required to kill were readily detected. 3. That urea injected into the blood of dogs was not converted into ammonium carbonate. We might therefore state that Frerichs's second proposition was without substantial foundation. It had been stated that the ammoniacal breath occasionally met with in uræmic patients was evidence of ammonia in the blood. It was more likely to be found in uræmics with gastro-intestinal symptoms, and the ammonia probably came not from the blood, but from the gastro-intestinal tract.

The theory of Trietz differed from that of Frerichs mainly in that it supposed the conversion of urea into ammonium carbonate to take place in the intestine instead of the blood. He held that it was by the entrance of the ammonium carbonate into the blood that the uræmic state arose, and the objections already made to the proposition of Frerichs, that uræmic blood contained ammonium carbonate, applied here with equal force.

The potassium theory of Felz and Ritter was based upon the idea that the potassium of the blood-serum, which was normally present in very small amount, might accumulate under pathological conditions and cause death, the potassium salt being rapidly fatal in animals when injected into the veins in even inconsiderable quantity. The experimental and chemical evidence of various observers was strongly opposed to this theory, and it might be unhesitatingly abandoned.

The theory of Brown-Séquard was that the kidney elaborated an internal secretion which was essential to health, and the suppression of which was responsible in a large degree for the phenomena of uræmia, while the accumulation of toxic substances in the blood was thought to have little or no influence in causing uræmic symptoms. The following were the chief facts upon which this hypothesis rested: 1. It was maintained that the injection of kidney extract into the circulation of a nephrectomized dog caused the temporary disappearance of uræmic symptoms. 2. It was held that the well-authenticated cases of survival of patients with anuria for a week or more without any signs of uræmia, especially in cases of mechanical obstruction of the ureters, was evidence that it was owing to the internal secretion of the kidney that this inhibition of uræmic symptoms took place. All the statements advanced in support of the first proposition, Dr. Herter said, were equivocal, and those advanced to support the internal secretion theory were equally weak.

The extractive theory of uræmia referred the toxæmic symptoms to the accumulation in the blood of the extractives usually found in urine; among these might be mentioned xanthine, uric acid, creatinine, etc. In order to show that a substance played a part in the production of uræmic symptoms it was necessary to prove that this substance was present in the blood in uræmia, or was present in excessive amount, and that the substance was toxic to the higher mammals. The evidence was not fully satisfactory regarding either of these points. The observations that had been made hardly established the fact that an accumulation of the extractives was a feature of all or many cases of uræmia. The evidence was even less strong in regard to particular members of the extractive group.

Regarding the view which attributed the uræmic phenomena to the action of toxines, the poisonous basic products of bacterial activity, there was little to be said, for the evidence on which it was built was scanty and conflicting. None of the toxic ptomaines that had been suspected in this connection had been found in the blood of uræmics.

The evidence relating to urea as a factor in uræmia might be grouped in answer to the following queries: 1. Does urea occur in excess in the blood of uræmic patients? 2. Is urea toxic, and, if so, to what extent does it explain the symptoms of uræmia? As regards the first question, we had a sufficiently large accumulation of observations made by competent investigators to enable us to reach a definite decision. In the blood of Bright's disease the quantity of urea was largely increased beyond that found in the normal blood, and its presence was readily detected even by imperfect chemical methods. When we came to the second question we found that the facts which favored and those which opposed the idea that urea was toxic seemed to be about evenly balanced. Dr. Herter then reviewed the observations that had been made bearing on this question, and detailed a number of experiments made by himself which went to prove that pure urea injected into the blood of the dog and monkey in large amount was in the highest degree toxic. The autopsies in these cases had disclosed marked congestion of the gastro-intestinal tract. To what extent and under what conditions urea was a factor in uræmia the author said it was not possible for him to state at the present time. Facts at our command strongly favored the view that the gastro-intestinal symptoms of uræmia were due to urea. There was no doubt that we at present grouped together under the term uræmia conditions which were totally distinct as regarded pathology. The evidence was very strong, though not quite conclusive, that one group of symptoms depended largely on the accumulation of urea and perhaps extractives in the blood, while another set of symptoms bore the stamp of an infective process operating in the presence of renal insufficiency. Observations might show that even further subdivisions of cases were required by pathological considerations.

It was upon the following facts that the author based the view that urea played an important part in causing the gastro-intestinal symptoms of uræmia:

1. The presence of urea in excess in the blood in such cases.
2. The property which pure urea possessed of causing such symptoms when injected into the circulation.
3. The occurrence in Bright's disease of congestion of the gastro-intestinal tract and the occurrence of a similar congestion in animals, which was positively due to the injection of urea into the blood.
4. The fact that urea was found in the dejecta of patients with gastro intestinal uræmia.
5. The absence in many of these cases of any elevation in temperature or other evidence of acute toxæmia.
6. The fact that the urine in these cases, even at the time of the crisis, was no more toxic than normal urine, which was in sharp contrast to the very toxic urines found in acute febrile uræmias of cerebral type.

Dr. W. H. **Thomson** said the subject of uræmia had always been and still remained a very confused one in his mind. Dr. Herter's paper was certainly a very valuable contribution to the subject. The cases of uræmia to which Dr. Herter had principally confined himself—those in which the characteristic symptoms were vomiting and purging—formed comparatively a small minority of those that came under observation. In many cases there were no gastro-intestinal symptoms whatever. Theoretically, Dr. Thomson said, he still felt strongly inclined to the view that toxines played a very important part in the production of the purely nervous symptoms of uræmia. Regarding the experiments performed by Dr. Herter in order to prove the toxic effects of urea, Dr. Thomson inquired whether the injection into the blood of sodium chloride or other similar substances might not give rise to derangements of the system to some degree resembling those produced by the repeated and rapid introduction of increasing quantities of pure urea.

Dr. **William** H. **Flint** said he was fully in accord with the statements made by Dr. Herter, in so far as they went to prove the ætiology of certain forms of uræmia.

Dr. J. S. **Ely** referred to the intestinal lesions that he had observed in performing autopsies on persons who had died of nephritis. It was often difficult to state positively whether the congestion had been present before death or had been produced by putrefactive changes. Unless the autopsy was made very soon after death, it would be hazardous to argue from the redder appearance of the mucous membrane that the congestion was the result of the disease.

Dr. **Sachs** expressed the hope that the critics of the future would deal more leniently with Dr. Herter's theory than he had dealt with the theories reviewed in his paper, and that they would expend the same amount of thought and labor to prove their assertions. He did not think that any one should attempt to establish a single theory to explain such a complex of symptoms as that of uræmia. Very much the same symptoms occurred under other conditions, and we were perfectly willing to recognize that different morbid processes gave rise to them.

Dr. **Herter** stated that in his paper he had not advocated any one theory to explain all the phenomena of uræmia. What he had advocated was that there was a certain class of symptoms, a limited class—namely, the gastro-intestinal symptoms—which were met with in certain cases of uræmia, and which were due, in all probability, to urea. The proof of this was not absolutely satisfactory, but he did not see how the proofs adduced by his experiments could be interpreted in any other light. In reply to Dr. Thomson's question, Dr. Herter said that large quantities of sodium chloride could be injected into the blood without producing symptoms comparable to those produced by the introduction of urea. As regarded the cerebral symptoms of uræmia, he did not know what they were due to, and in his paper he had made no attempt to throw any light on those cases. The autopsies on the animals which had been killed by the introduction of urea had been performed immediately after death, and the intestinal congestion had been very marked.

Book Notices.

Étude clinique de la cardio-sclérose (cardiopathies artérielles, artério-sclérose du cœur). Par **Henri Huchard**, Président d'honneur de la Société médico-chirurgicale de Paris, Médecin de l'hôpital Bichat. Paris: Félix Alcan, 1893. Pp. 139.

The author has insisted for a long time past upon the clinical importance of considering the influence of the heart upon the prognosis of diseases in general. In many cases an asystolic condition will suddenly manifest itself, as in old age, and fatally terminate what would have otherwise appeared a trivial indisposition. These apparently sudden cardiac implications are peculiar to a sclerotic condition of the arterial system, a condition whose symptoms have for the first time been clearly defined by Huchard. These symptoms are in the beginning such as would be generated by excessive arterial tension, and are, for instance, local algidities, similar in nature to a local syncope of the extremities, and rheumatoid pains or cramps in the continuity of the extremities, accompanied by a sensation of local fatigue or of paretic heaviness, due to a spasmodic condition of the arterio-capillary system (Weber). Vertigo is frequent and may be either matutinal or habitual. Cephalalgia exists; the head is heavy and the ears ring. Visual trouble may take on the form of ophthalmic megrim. The patient is somnolent, his head feels empty, and he is unfit for intellectual work.

There exists a tendency to congestion and to hæmorrhage. Polyuria is frequent, even habitual, and is alternating in character, the urine being sometimes abundant and limpid and at other times concentrated and charged with urates.

Paroxysmal pallor of the face occurs, and a rapidly produced anæmic condition may as quickly give place to the normal color or even to a congested state.

The pulse is full, strong, and vibrating if the excess of tension is due to an active vaso-dilatation, or constricted, tense, stretched like an iron wire, if it is consecutive to a vaso-constriction. This latter condition may be so accentuated as to give rise to an error in diagnosis which it will require the aid of the sphygmomanometer to rectify. The needle of this instrument (Potain's) will mark twenty, twenty-five, or thirty divisions instead of the normal figure of sixteen or eighteen. The pulse is usually regular in the beginning of the disease, without inequality or intermittence. In confirmed arterio-sclerosis this condition changes, and, moreover, the right and left pulse may be unequally manifest, the left one being the weaker of the two.

The essentially pathognomonic sign of excessive arterial tension is, however, a diastolic modification in intensity and tonality of the aortic *bruit*, usually located in the second right intercostal space and resembling the sound formed by the rebound of a hammer from a solid surface. Of fundamental importance to the diagnosis is the existence of an abnormal pulsation of the arteries, and more particularly of the cervical, of an increased aortic dullness, and of elevation of the subclavian arteries. The last two symptoms are due to aortic dilatation, which latter gives rise also to a functional aortic insufficiency.

The size of the heart may be increased by myo-hypertrophy and sclero-hypertrophy, and thus its area of dullness and the location of its apex beat may vary indefinitely according to these abnormal conditions.

The precordial shock will be more forcible and accentuated as a result of the excessive tension, to which are also due a more or less persistent tachycardia and painful palpitations, frequently nocturnal. The systole is prolonged, and the sphygmograph demonstrates the existence of arrhythmia and intermittence, either of a temporary or of a definite character.

Acute dilatation of the heart is of frequent occurrence, accompanied by a partial mitral insufficiency. Asystolism may ensue from this dilatation.

The arterio-sclerosis of the viscera produces claudication of their various functions. This is due to the intermittent blood supply and was inexplicable before Huchard's studies threw a light upon the whole subject (Grasset). This meiopragia is the cause of the sudden, frequently recurring, and mobile pulmonary congestions, of the acute pulmonary œdemas, and of that form of dyspnœa *sine materia* which is accompanied by paroxysmal coughing without expectoration, dependent probably upon aortic or cardiac irritation (François Frank). The spirometric capacity is diminished.

The nutrition suffers, the renal elimination is faulty, the urotoxic coefficient is lowered, and the patient becomes self-intoxicating, dyspnœic, vertiginous, and delirious.

For the diagnosis, the pathological anatomy, and the treatment we beg to refer the reader to the author's very valuable clinical study.

The one fault of this most original work is perhaps the frequency with which the author renews his examination of each symptom, entailing the necessity of continual reference to preceding paragraphs in order to appreciate the relation of the various aspects of the question.

The Dispensatory of the United States of America. By Dr. George B. Wood and Dr. Franklin Bache. Seventeenth Edition. Thoroughly revised and largely rewritten. With Illustrations. By H. C. Wood, M. D., LL. D., Professor of Materia Medica, etc., in the University of Pennsylvania, etc.; Joseph P. Remington, Ph. M., F. C. S., Professor of Theory and Practice of Pharmacy in the Philadelphia College of Pharmacy, etc., and Samuel P. Sadler, Ph. D., F. C. S., Professor of Chemistry in the Philadelphia College of Pharmacy. Philadelphia: J. B. Lippincott Company, 1894. Pp. xliv–1930.

The newest edition of this venerable work—always a favorite with the American medical and pharmaceutical professions—shows abundant marks of thorough revision, especially in the increased number of articles in the second part, the first section of which is devoted to the *National Formulary.* The text is preceded by a useful Index of Diseases. The reputation of the book is well maintained in this edition.

Congenital Affections of the Heart. By George Carpenter, M. D., London. Member of the Royal College of Physicians, etc. London: John Bale & Sons, 1894. Pp. 103. [Price, 3*s.* 6*d.*]

The brief reference that is made in text-books to congenital cardiac affections is the author's reason for publishing this brochure.

He briefly reviews the embryonic development of the heart, and then considers the congenital affections of the pulmonary artery and its orifice, which Peacock's study showed to exist in a hundred and nineteen cases out of a hundred and eighty-one of various congenital cardiac affections. Reference is made to the rare formation of sæpta in the cardiac cavities and to the equally rare condition in which the ductus arteriosus supplies or gives origin to the descending aorta. Coarctation of the aorta, the origin of the pulmonary artery from the left ventricle, transposition of the aorta and pulmonary artery, and failure of the sæptum of the bulbus arteriosus to develop, are briefly mentioned. Perforate sæptum ventriculorum, patent foramen ovale, and patent ductus arteriosus are mentioned at greater length, and the author agrees with other observers that these conditions may exist without presenting physical symptoms of cardiac abnormity. Regarding valvular abnormities, the author quotes Osler and Viti to the effect that diminution of the number of segments of the semilunar valves is usually found in the aorta, while redundancy in the number of segments usually occurs, according to Dilg's statistics, in the pulmonary artery.

The ætiology of these affections is obscure; they may be due to fœtal endocarditis or to developmental errors.

The symptoms are various, even cyanosis being absent in conditions in which its presence might have been expected from the character of the lesion. The stethoscopic signs are of a varied character, and often examination reveals nothing unusual.

Dr. Carpenter has not endeavored to make this a monograph with an exhaustive study of collected reports of congenital cardiopathies, but rather a brief exposition of what is known regarding these diseases. In doing this he has, perhaps, subordinated his personal experience to too great an extent, but not to the sacrifice of an intelligent consideration of the subject.

Notes on Nursing in Eye Diseases. By C. S. Jeaffreson, M. D., F. R. C. S. E., Senior Surgeon and Honorary House Governor to the Northumberland, Durham, and Newcastle Infirmary for Diseases of the Eye, etc. Bristol: John Wright & Co., 1894. Pp. vi–90. [Price, 2*s.* 6*d.*]

Dr. Jeaffreson states, to begin with, that he has "no hesitation in saying that many eyes are annually sacrificed in this country [England] through inefficient and careless, or rather, I would say, ignorant nursing." This is certainly unfortunate if true, but it is to be feared that still more unfortunate results might follow were the directions given in this book to be carried out in every particular. Cases in sufficient numbers present themselves at any large clinic with evil effects produced by the application of poultices to the eyes to warn a practitioner not to follow the advice given on page 25, and the nurse who follows that advice will not be apt to recommend herself thereby very highly to either physician or patient. Again, to apply a cooling lotion it is recommended that "four folds of lint be soaked in it, then applied to the eyes and secured by a light muslin bandage, the lotion being renewed every hour." This would seem a rather efficient method of applying a warm poultice for from fifty-five to fifty-nine minutes every hour, with short intermissions during which a cooling lotion is applied. The work is not worth so long a notice as this, and the pieces of advice cited will serve to show its character.

Syllabus of the Obstetrical Lectures in the Medical Department of the University of Pennsylvania. By RICHARD C. NORRIS, A. M., M. D., Demonstrator of Obstetrics, University of Pennsylvania, etc. Third Edition. Philadelphia: W. B. Saunders, 1894. Pp. xviii–222. [Price, $2.]

IN the present edition of this little work the author includes those additions to his lectures that have been made during the past two years. In all points we notice that his instruction is abreast of recent investigation, and the terse presentation of the various topics can not fail to impress the student and enable him to grasp the subject.

A Manual of Therapeutics. By A. A. STEVENS, A. M., M. D., Lecturer on Terminology and Instructor in Physical Diagnosis in the University of Pennsylvania, etc. Philadelphia W. B. Saunders, 1894. Pp. 17 to 435. [Price, $2.25.]

THE medical student of the present day regards the study of materia medica and therapeutics as his most difficult task. We know this because he has told us so, and our own past experience does not lead us to doubt him. It is but natural that this should be so, for the study of drugs, doses, and treatment offers no opportunity for the play of logic as other branches of medicine do, and therapeutics is not susceptible of practical demonstration in the medical courses of to-day. This branch of medicine is, then, to the student dry and dogmatic to the last degree.

Since the science of therapeutics must, however, be learned, it is necessary to make its study as easy as possible. With this idea in mind, many authors have produced "handbooks," "manuals," and "quiz compends," which, as the subject offers no chance for other handling, consist of tabulations, condensations, and (we dislike to record it) questions and answers. Now, most of these books are very bad.

The manual which Dr. Stevens has written is far superior to most of its class; in fact, it is very good. It is not a book to which the practitioner would turn for information (though he might do worse), as the author himself says, "this manual has been prepared especially for students." To students we are sure the book will be a great help, for it is very well arranged, and the classification, heading, paragraphing, and condensation, always so important to the student, are unusually good. Moreover, the book is reliable and accurate. Practically it is divided into two parts, of which the first deals with materia medica—that is, drugs—and the other with applied therapeutics. To the volume are added indices of remedies and of diseases, as well as a table of doses.

BOOKS, ETC., RECEIVED.

Clinical Diagnosis. By Albert Abrams, M. D. (Heidelberg), Professor of Pathology, Cooper Medical College, San Francisco, etc. Third Edition, revised and enlarged. Illustrated. New York: E. B. Treat, 1894. Pp. xi–273. [Price, $2.75.]

Gonorrhœa. Being the Translation of Blennorrhœa of the Sexual Organs and its Complications. By Dr. Ernest Finger, Docent at the University of Vienna. Third Revised and Enlarged Edition. With Seven Full page Plates in Colors and Thirty-six Wood Engravings in the Text. New York: William Wood & Company, 1894. Pp. vii–324. [Price, $3.]

The International Medical Annual and Practitioner's Index: A Work of Reference for Medical Practitioners. By Various Authors. Twelfth Year. New York: E. B. Treat, 1894. [Price, $2.75.]

Transactions of the Southern Surgical and Gynæcological Association. Volume VI. Sixth Session, held at New Orleans, La., November 14, 15, and 16, 1893.

The Operative Treatment of Non-microcephalic Idiocy. By J. F. Binnie, C. M., Kansas City. [Reprinted from the *Annals of Surgery.*]

The Twenty-first Annual Report of the Metropolitan Throat Hospital for the Treatment of the Nose, Throat, and Ear.

Transactions of the American Dermatological Association at its Seventeenth Annual Meeting held at the Hotel Pfister, Milwaukee, Wis., on the 5th and 6th of September, 1893.

Miscellany.

Contagion and Phthisis Pulmonalis.—Under this heading the brilliant author of the *Asclepiad*, Sir Benjamin Ward Richardson, M. D., F. R. S., says in the current number of that periodical:

"As if to discount good influences of a true hygienic character in reducing the death-rate from phthisis pulmonalis, some enthusiasts, in writing on the contagion speculation, have endeavored to show that the lessened mortality from the disease, observable during the past few years, is due to the influence of the doctrine of contagion. Dr. Lawrence Flick, of Philadelphia, has written in this strain in the *Medical News* for May 14, 1892. He calculates that the actual decrease of deaths from phthisis in Philadelphia, from 1881 to 1891, is 0·734 per thousand of living people, which, with the present population, shows a saving of 784 lives a year. The result he assumes to be due to the circumstance that members of the medical profession in Philadelphia, having become converted to the hypothesis that phthisis pulmonalis is spread by contagion from particles of dried sputum derived from patients affected with the disease, have taken care that such contagious matter shall be at once destroyed, and so have prevented the spread of the disease by communication. It is astounding how speculations of the kind named are supported on coincidences. There is a physician living in this country who, with equal argument, believes that the reduced mortality from the disease in question is due to a medicinal cure for the disease which he himself has introduced. To prove the beliefs of such advocates, it would have to be demonstrated how many practitioners have prescribed the means of prevention or cure specified, and how many times their suggestions have been practically acted upon. Impossible demonstrations! As to the first—the conversion of the profession to the hypothesis of contagion and the influence of that conversion in modifying the death-rate—it is the simplest truth to say that if the profession in Philadelphia is at all like the profession here, there is not a shadow of evidence in support of the proposition. There are a few probably who, accepting the hypothesis out and out, are more particular respecting cleanliness and removal of expectoration than they were; while the many, looking at the hypothesis doubtfully, are as little influenced by it now as they ever were. Why should this not b so? The experience gathered in Naples on this subject, when the most rigid rules for destruction of all morbid material failed to render service, is not likely to be forgotten; while the majority of observers have never been able to see the evidence that would establish the hypothesis. Let me take in illustration my own experience. In my student life I was under an able teacher of the practice of medicine—the late Dr. Andrew Anderson, of Glasgow. In his lectures on phthisis, he entered carefully into the contagion theory, at that date—1846—rather popular. He held a wise reserve on his own part; but he told us the question was a vexed one, and he urged us all to watch most carefully for ourselves in our future lives. I was one who determined to watch intently, without bias—how could I have any occasion for bias?—and persistently. I have sustained my watchfulness in the same spirit from then until this day—*i. e.*, over a period of nearly fifty years. Every opportunity has been afforded me for watching. I entered early in life into the experience of a large general practice; I left that for physician's practice in London. I became physician to an infirmary for diseases of the chest, situated in a densely populated part of London. I held my post for about fourteen years, rising to the senior physicianship. During a part of this same period I acted as one of the physicians to the Metropolitan Dispensary, the Blenheim Street Dispensary, and the Margaret Street Dispensary, another institution for the treatment of consumption. This was a wide field for practice and for observation. Moreover, at these institutions, where I gave systematic instruction, I was fortunate in having able assistants, who kept careful notes of the cases under treatment. In the course of the period named no fewer than three thousand patients suffering from phthisis came before me; and during all the time the question of evidence on the point of contagion was never for a moment lost sight of. It is the fact that in all this field of practice not a single particle of evidence ever came before me that sustained the contagion theory, or gave, on reliable data, the least color to it. No professional brother, no assistant, no nurse, no person connected in any way with the phthisical sick, ever afforded indication of having received the disease by communication; and it is worthy of remark that no physician of my acquaintance, in the days I speak of, ever expressed a suspicion of communication by contagion. In the fifties, we had in London a society for the special study of chest diseases. In it were men of acute observation, and of skill in diagnosis. We were all engaged in hospital practice, and we all worked earnestly. The late Dr. Baly, Dr. Snow, Dr. Leared, Dr. Sibson, Dr. Francis Webb, Dr. Risdon Bennett, Dr. Edward Smith were members of this society, as were Sir Richard Quain, Dr. Hawksley, Dr. Cockle, and one or two more whose names escape me. We met in turn in each other's homes; we drafted patients to our meetings for careful study; we discussed every point with the utmost freedom of discussion; but I feel sure at that time not one of us entertained seriously the hypothesis of contagion. Was it that we were all blind to evidence which must have been passing every day before our eyes—evidence which should have occurred to us, apart from any hypothesis, if it existed? Was this revived hypothesis wanted to open our eyes? Or was it that when the hypothesis was once restarted those who accepted it did not really see what they had failed to see previously, but were led to adapt their discernment to the requirement and to receive what was necessary to be received in order that the hypothesis might stand on a logical foundation?

"I resigned my work as physician to the special institution for diseases of the chest toward the latter part of 1867, but I have remained up to the present time profiting from another course of experience in a practice of twenty-five years. In the tter part of that time much controversy has been revived on this subject of the communicability of phthisis by contagion, and although I have taken little public part in the controversy, I have been as active in observation as ever I was, endeavoring to learn without the least prejudice the exact facts. For many years I have sat at a board of insurance directors, feeling all the responsibility that attaches to that official duty. In every case of phthisis pulmonalis that has come under my notice in practice, and in every case of the same disease of which I have had cognizance otherwise, I have been vigilant to arrive at the circumstances under which the first symptoms of the disease were manifested. Not once has there been evidence of origin of phthisis from contagion on which I could rely. It is true I may more than once have heard the conclusion that some contagious influence was at work, but on further inquiry the evidence has broken down. There were living near to me two sufferers from the malady who occupied the same house. They were brother and sister, the only children of a professional friend; they had the hereditary history painfully characteristic of phthisis, and in the course of the affection in them from the beginning to the fatal end their symptoms ran so closely as to be like twin phenomena. Could there have been contagion in these cases? Many might have said so who had not taken pains to investigate the facts. To me the facts were familiar. The brother was often assisting me in my work, so that I knew his history; and his attack dated from a severe cold contracted by exposure to an intense chill at an evening party, to which he went lightly clad, and in which he added to the risk from changing portions of his dress for some much lighter ones in order to take part in a charade or play. He sent for me at once when he became ill. It was the old story of pneumonia followed by rapid tubercular phthisis. The sister at this time was many miles in the country, where she had been for several months, during which time the two had not once met each other. She, like her brother, took a severe cold, and when she came home and passed under my care she was in the same state of phthisis as he. In neither case was there the remotest evidence of contagion, yet because of their affinity I afterward heard it adduced that contagion was at work. Not infrequently on being called upon to prescribe for phthisical patients the statement has in late times been made to me that the disease had been contracted by contagion, but in not one instance has any proof been supplied that would in a court of law of the first instance bear investigation.

"I ask naturally in conclusion, Can I be blind to open facts, or do I see correctly, and has the hypothesis of contagion blinded those who see differently from myself? Willingly I will admit myself blind, and will submit myself to any correction that will give me sight; but the correction must be supplied, and in a form that makes all so clear that he who runs may read. I must be shown one case of phthisis in which the evidence is absolute that the disease was contracted from contagion, and that it could not possibly have been produced by any other determining cause.

"Returning to Dr. Flick and his argument—that the mortality from consumption in Philadelphia, or any other city for the matter of that, is reduced by the precautions taken in regard to the disposal of the sputum of afflicted persons—the point is clear enough that what he traces as cause and effect is due to nothing more than coincidence.

"No sanitarian for the past forty years, to my knowledge, has doubted the fact that phthisis pulmonalis will disappear just in proportion as broad sanitary views are established and brought into practice. We have all believed and, as we think, proved that under new conditions, in which there is provision for a better heredity, in which cleanliness becomes the watchword of sanitation, in which the youth of both sexes can enjoy free exercise and recreation in the open air, and in which the labor of life in confined places is being reduced to a proper standard; we have all believed that with these changes the disease would die out altogether. In my *Essay on the Hygienic Treatment of Pulmonary Consumption*, published in 1856, these principles were so strenuously enforced that I was looked upon in enforcing them as a visionary, and as wanting in that practical acumen which was necessary for successful effort in the treatment and prevention of disease. I was not alone in that argument, but I was one of a very few. In time our principles prevailed, and the reduction of mortality from consumption in military barracks, owing to reforms which were insisted upon in our teaching, afforded direct evidence, long before this contagious idea was advanced, of the truth and correctness of our observation.

"The process of purification has since then gone on by leaps and bounds, and we are beginning to see the good results; a new hypothesis springs up coincidently which may or may not be right to a certain extent within its own narrow range, but which has no more to do with the great results at this time boasted of than the reduction of typhus in its worst forms has to do with carrying of camphor in the pocket, or placing rue in the wardrobe or on the desk before the judge of assize. It may be quite practical, it is quite practical, to take care that the expectorated secretion of consumptive patients is destroyed. The late Dr. William Farr put his finger on this fact, and every sanitarian felt the importance of his advice. But this is merely a matter of cleanliness, merely a part of the whole system of perfect hygiene; and if we let this one thing stand as if it were the whole thing, we shall merely lead to carelessness in regard to everything else, and shall make matters worse instead of better. Dr. Flick is so good an observer and so earnest a man, there can be no hesitation in being critical on this particular part of his instructions, and it is only because it is painful to see him narrowing himself to one issue that this criticism is ventured upon. I hope he will take a wider view as time rolls on, and accepting the old message of the Mishna, that 'Outward cleanliness is inward godliness,' or, as John Wesley transformed it, 'Cleanliness is next to godliness,' will become a preacher of true catholic doctrine in all that relates to sanitation and the physical welfare of the world."

The Extraordinary Effects of a Large Dose of Hyoscine.—In the March number of the *Indian Medical Record*, Assistant Surgeon Balagopal, L. M. S., relates the case of a man, fifty years old, who was an inmate of the Chhatarpur Hospital suffering from mania. For twenty-five years he had had maniacal attacks each of which lasted at least a month, after which he gradually recovered his sanity and remained quite sane for six or seven months. He had been treated by various eminent physicians, but only with the result of tempering the violence of his maniacal paroxysms; the attacks continued to occur twice a year. At last, after having been forced to retire from his work as a post-office employee, he had asked the author to treat him, remarking that life was a burden, and that he would rather poison himself than suffer any longer from his dreadful disease. Two or three days after this a severe attack of maniacal delirium occurred, and the author tried divers sorts of nervine, sedative, and antispasmodic medicines, together with the use of plasters, blisters, and setons, but all proved of no avail. As a last resort he gave the patient a hypodermic injection of a sixth of a grain of hyoscine hydrobromide. In two or three minutes after the injection the patient fell down prostrate upon the ground and cried out that he was dying. His face became deadly pale and the conjunctivæ insensitive. The pupils were extremely dilated, the breathing was very difficult and stertorous, the limbs were contracted spasmodically, the pulse was very weak and compressible, and the temperature was subnormal. The author, being very much alarmed at the man's condition, hastened to his bookcase to ascertain the proper dose of the medicine, and to his utter dismay found that it was from 0·03 to 0·01 of a grain, while he had given a sixth of a grain. Feeling that he had unwittingly poisoned the poor maniac, he began to stimulate him by means of hypodermic injections of twenty minims of sulphuric ether every half hour. After the third injection the spasms were seen to diminish in frequency and in strength, and after the fourth they ceased, the conjunctivæ responded to the touch, and the breathing became a little easier. At the same time the color was seen to return to the man's face. In half an hour after the fifth injection the man tried to open his eyes and to speak; after this he improved gradually and recovered consciousness in five or six hours after he had received the dose of hyoscine. After this the patient improved day by day, and in the course of a week he was of sound mind, and had since shown no signs of cerebral trouble.

The Use of Sulphur in Surgery.—In the *Lancet* for April 7th Mr. W. Arbuthnot Lane, assistant surgeon to Guy's Hospital and to the Hospital for Sick Children, London, refers to a short paper published by him in the *Medical Week* for December 8, 1893, entitled How Far is Sulphur likely to be of Service to the Surgeon? wherein he had described two cases of very extensive tuberculous disease of the hip and elbow in which sulphur had been used with very satisfactory results, since both patients had recovered rapidly and perfectly. Mr. Lane now repeats the summarized conclusions of that paper as follows: 1. Sulphur applied locally appears to exert no deleterious effect on the health of the individual. 2. It gives rise to products which are powerfully caustic in their action; therefore it must be used in small quantities and with discretion. 3. It destroys all organisms, whether free in a space or growing in the surrounding tissues. 4. It acts much more powerfully upon recently incised structures than upon granulating surfaces. 5. Its action is rendered more uniform and general and less violent by mixing it with glycerin. 6. If used in any quantity the drug must be removed within a day or two and irrigation subsequently adopted.

Mr. Lane states that since he wrote that paper he has used sulphur very largely, not only in tuberculous conditions, but in other infective processes, and with the most satisfactory results. In the treatment of extensive tuberculous disease with much destruction of bone his rule is, if there is a well-defined cavity in the bone, to pack it with iodoform in the way described by him in the *Lancet* for July 15, 1893; if there is no such suitable space, and if it is impossible to remove all tuberculous material with certainty, he places an emulsion of glycerin and sulphur in the cavity, allows it to remain for twenty-four hours, and then irrigates daily for a time with a weak solution of mercury bichloride or with a sterile normal saline solution. He thinks its action is seen to the best advantage perhaps in recent foul wounds with extensive laceration and bruising. He relates a case illustrative of this. A man, thirty years old, was admitted into Guy's Hospital under his care on February 11th. While cleaning a window he had fallen forty feet. His forearm had been transfixed on a spike of the area railing and he had been suspended upon it. The skin and muscles of the forearm were found extensively lacerated along the whole of its length, and portions of the man's coat, which was very dirty, were found imbedded among the "pulped" muscles. Such portions of the muscles as were very much mashed and soiled were removed. The ulnar artery was not injured. The damage to the soft parts was so extensive and the fouling so considerable that the author believed that, however thoroughly the parts might be washed with germicidal lotions alone, amputation would soon become necessary. Therefore, after cutting away some parts, cleaning up others, and removing the foreign matter present, he introduced everywhere into and between the lacerated tissues gauze saturated with an emulsion of sulphur and glycerin. At the end of twenty-four hours this was removed; the wound was then found to give out a decided odor of sulphureted hydrogen and the tissues were covered with a soft black slough. Irrigation with a weak bichloride-of-mercury solution was used daily, and the intervals in and between the lacerated muscles were packed with cyanide gauze. The slough soon separated, leaving a healthy granulating surface. The highest temperature recorded was 100·6° F., during the evening following the operation. The author says there is little or no doubt in his mind that such a result could not have been obtained by means of the germicides in general use.

Mr. Lane's experience is that there is no topical remedy so perfectly satisfactory in its results in cases of lupus as sulphur, whether in the form of powder, emulsion, or ointment. In every case in which he has used it a rapid cure has resulted, with practically no destruction of tissue other than the lupus tissue. In case of cancerous or sarcomatous ulceration, he says, the destruction of the soft parts can be regulated and determined very accurately. Unlike the escharotics in common use, sulphur has practically no effect on healthy cutaneous or mucous surfaces, but requires the action of a granulating raw surface to determine the formation of sulphurous and sulphuric acids, which are apparently the agents that influence the vitality of the organisms and tissues with which they come in contact. Mr. Lane has also found sulphur most useful in the foul ulcerative stomatitis which is so common among the children of the poor and so obstinately resists the local treatment usually adopted. In such cases, if gauze or wool dusted abundantly with the finely powdered drug is retained in firm contact with the foul ulcerated surface for an hour or two, sufficient destruction results to clear the surface of its infective organisms, and it then heals rapidly. Should one application not produce a sufficient result, others may be resorted to, the number depending on the extent and locality of the ulceration, the facility with which the plug can be retained in position, etc. He has found applications of sulphur equally effectual in destroying the micro-organisms that produce the foul impetiginous ulcers seen in children. Sulphur, like iodoform, says Mr. Lane, becomes active as a germicide, and is very considerably more powerful in its action than iodoform, only when in immediate contact with a raw surface, the living tissue causing it to form certain combinations with hydrogen and oxygen. In this connection the author refers to Dr. Ray-Pailhade's experimental researches on philothion, a substance which that writer infers to exist in living tissue and to be capable of combining with sulphur.

The National Association of Railway Surgeons.—The seventh annual meeting will be held in Harmony Hall, Galveston, Texas, on May 8th, 9th, 10th, and 11th, under the presidency of Dr. W. J. Galbraith, in addition to whose address the programme will include the following subjects for discussion: Conservatism in the Treatment of Compound Comminuted Fractures of the Leg, by Dr. George R. Dean, of Spartanburg, S. C.; Compound Fractures, by Dr. Milton Jay, of Chicago; Plaster-of-Paris Splints to Fractures, Simple and Compound, by Dr. J. G. Buchanan, of Pittsburgh, Pa.; Anæsthesia (Local and General), and its Proper Production, by Dr. E. A. McGannon, of Brockville, Ontario, Can.; Fracture and Dislocation of the Spine, by Dr. Thomas H. Manley, of New York; Diagnosis of Injuries of the Cord and its Envelopes with and without Fracture of the Spine, by Dr. C. H. Hughes, of St. Louis; The Treatment of Injuries of the Cord and its Envelopes with and without Fracture of the Spine, by Dr. W. B. Outten, of St. Louis; The Medico-legal Relation of Injuries of the Cord and its Envelopes with and without Fracture of the Spine, by Clark Bell, Esq., of New York; Some of the Uses of Hot Water in Recent Injuries in Railway Surgery, by Dr. N. A. Drake, of Kansas City, Mo.; Minor Surgery, by Dr. J. D. Myers, of Huntington, W. Va.; Color-blindness, by Dr. D. Emmett Welsh, of Grand Rapids, Mich.; Exhibition of New Tests for Simulated Blindness in One Eye, by Dr. James L. Minor, of Memphis, Tenn.; Evisceration *vs.* Enucleation following Injuries of the Eye, by Dr. A. E. Prince, of Springfield, Ill.; Rectal and Anal Surgery and its Relation to Railway Injuries, by Dr. S. G. Grant, of Kansas City, Mo.; Should the National Association of Railway Surgery become a Delegatory Body? by Dr. R. Harvey Reed, of Columbus, Ohio; Quarantine and its Relation to the Railway Surgeon, and Railway Surgeons' Relation to Quarantine, by Dr. Van B. Thornton, of Hempstead, Texas; Litigation Psychosis, by Dr. Matthew D. Field, of New York; A Case that Ought to have been One of Railway Spine, and its Treatment, by Dr. C. M. Woodward, of Tecumseh, Mich.; A Novel Case of Cerebral Traumatism, by Dr. J. R. Barnett, of Neenah, Wis.; A Case of Fracture of the Spine—Operation followed by Improvement, by Dr. John E. Sylvester, of McArthur, Ohio; The Evolution of Railway Surgery, by Dr. E. R. Lewis, of Kansas City, Mo.; Dressing of the Stump in Amputation, by Dr. A. B. Brumbaugh, of Huntington, W. Va.; Railways and Railway Surgery, by Clark Bell, Esq., of New York; An Improved Railway Stretcher, by Dr. R. Ortega, of Ciudad Porfirio Diaz, Mex.; Thiersch's Grafts in Extensive Destruction of the Soft Parts about the Large Joints, by Dr. Henry W. Coe, of Portland, Ore.; A Digest of Four Hundred Consecutive Railway Cases, by Dr. Howard J. Williams, of Macon, Ga.; The Management of Burns and Scalds, with Cases, by Dr. C. K. Cole, of Helena, Mont.; A Case of Spinal Injury with Rupture of Intestine; Operation and Recovery, by Dr. I. N. Warren, of Sioux City, Iowa; Concussion, by Dr. George W. Cox, of Brownsville, Oregon; Shock: its Phenomenal Results, by Dr. Willis M. Wilson, of Curtis, Neb.; Clinical Cases: Shock, Hæmorrhage, and Tendon Suture, by Dr. John Van Duyn, of Syracuse, N. Y.; and The Treatment of Shock, by Dr. James H. Letcher, of Henderson, Ky.

American Gynæcological Society.—The nineteenth annual meeting will be held in the Columbian University, corner of Fifteenth and H Streets, Washington, on May 29th, 30th, and 31st, under the presidency of Dr. William T. Lusk, of New York, in addition to whose address the programme will include the following papers and subjects for discussion: Extirpation of the Uterus in Diseases of the Annexa (to be opened in the affirmative by Dr. J. M. Baldy, of Philadelphia, followed by Dr. Florian Krug and Dr. H. T. Hanks, of New York; in the negative by Dr. T. A. Reamy, of Cincinnati, followed by Dr. W. G. Wylie, of New York); The Management of Face Presentation (to be opened by Dr. Edward R. Reynolds, of Boston, followed by Dr. Charles Jewett, of Brooklyn, and Dr. B. C. Hirst, Dr. C. P. Noble, and Dr. E. P. Davis, of Philadelphia); The Abuse of Trachelorrhaphy, by Dr. William R. Pryor, of New York; The Fatal Nausea and Vomiting of Pregnancy, by Dr. Edward P. Davis, of Philadelphia; Myomectomy as a Substitute for Hystero-myomectomy, by Dr. E. C. Dudley, of Chicago; The Proper Position of Recent Surgical Methods in the Treatment of Uterine Fibroids, by Dr. William T. Lusk, of New York; Rupture of the Uterus (to be opened by Dr. Charles M. Green, of Boston, followed by Dr. Malcolm McLean and Dr. H. C. Coe, of New

York); The Alexander Operation, by Dr. Clement Cleveland, of New York; The Ultimate Results of the Treatment of Retrodisplacement by Pessaries, by Dr. Francis H. Davenport, of Boston; The Influence of Laceration of the Perinæum on the Uterus, and the Operation for its Repair, by Dr. W. Gill Wylie, of New York; Retroperitoneal and Intraligamentous Tumors of the Uterus and Annexa, by Dr. William H. Wathen, of Louisville; Inflammation of the Ureters from a Medical Standpoint, by Dr. Matthew D. Mann, of Buffalo; The Influence of Minor Forms of Tubal and Ovarian Disease in the Causation of Sterility, by Dr. Thomas A. Ashby, of Baltimore; The Results of Vaginal Fixation of the Stump in Abdominal Hysterectomy, by Dr. Henry T. Byford, of Chicago; Symphysiotomy *versus* the Induction of Premature Labor, by Dr. Charles P. Noble, of Philadelphia; The Conservative Surgery of the Female Pelvic Organs ("referee," Dr. William M. Polk, of New York; "co-referee," Dr. William Goodell, of Philadelphia); In Memoriam, Dr. Andrew Dunlap, by Dr. John C. Reeve, of Dayton, Ohio; and In Memoriam, Dr. John M. Keating, by Dr. Edward P. Davis, of Philadelphia.

The American Dermatological Association.—The eighteenth annual meeting will be held at the Arlington Hotel, Washington, on May 29th, 30th, 31st, and June 1st, under the presidency of Dr. R. B. Morison, of Baltimore, in addition to whose address the following papers will be presented: Thyreoid Feeding in Diseases of the Skin, by Dr. G. T. Jackson, of New York; The Rare Forms of Alopecia, by Dr. G. H. Fox, of New York; A Case of Favus of the Head and Body, by Dr. J. A. Cantrell and Dr. E. J. Stout, of Philadelphia; The Pathological Anatomy of Pearly Epithelioma of the Face, by Dr. J. A. Fordyce, of New York; The Question of the Contagiousness of Molluscum Contagiosum, by Dr. H. W. Stelwagon, of Philadelphia; The Therapeutic Value of Urea in the Treatment of Skin Diseases, by Dr. C. W. Cutler, of New York; Ichthyosis Congenita (so-called Harlequin Fœtus)—History of a Patient still Living, by Dr. S. Sherwell, of Brooklyn; Angeioma Serpiginosum and some other Dermatoses, by Dr. J. C. White, of Boston; The Protozoa-like Bodies of Herpes Zoster; a Contribution to the Study of Psorospermosis, by Dr. M. B. Hartzell, of Philadelphia; Cold as an Ætiological Factor in Diseases of the Skin, with a Report of Cases, by Dr. W. T. Corlett, of Cleveland; Acquired Idiosyncrasy for Quinine, showing Peculiar Cutaneous Manifestations, by Dr. C. W. Allen, of New York; a paper by Dr. E. B. Bronson, of New York (title to be announced); The Relation of Impetigo Herpetiformis to Pemphigus Vegetans, by Dr. J. Zeisler, of Chicago; and Notes on Drug Eruptions, by Dr. J. A. Fordyce, of New York.

Subjects for Discussion.—The Distribution and Control of Leprosy in North America: Distribution, by Dr. J. N. Hyde, of Chicago (to be discussed by Dr. J. E. Graham, of Toronto, Canada); Diagnostic Features and Treatment, by Dr. P. A. Morrow, of New York (to be discussed by Dr. A. Van Harlingen, of Philadelphia); Contagiousness, Prophylaxis, and Control, by Dr. J. C. White, of Boston (to be discussed by Dr. G. H. Fox, of New York, Dr. J. D. Bryant, of New York, and General W. C. Wyman, U. S. M. H., of Washington). Open discussion of the Clinical Forms, Ætiology, and Treatment of Dermatitis Exfoliativa.

American Pædiatric Society.—The sixth annual meeting will be held at the Arlington Hotel, Washington, on May 29th, 30th, 31st, and June 1st. The preliminary programme includes the following papers: A Eulogy on Dr. John M. Keating and Dr. Charles Warrington Earle, by Dr. F. Forchheimer, of Cincinnati; A Eulogy on Dr. T. F. Sherman, by Dr. T. M. Rotch, of Boston; The Influence of Blood Supply on the Irritability of the Spinal Motor Centers, by Dr. B. K. Ratchford, of Newport, Ky.; The Early Diagnosis of Pott's Disease of the Spine in Children, by Dr. Dillon Brown, of New York; a case, by Dr. William P. Northrup, of New York; Tonsillotomy, followed by Diphtheria and Croup, by Dr. Augustus Caillé, of New York; The Ætiology and Prevention of Rickets—the Influence of Race (especially in Italians) and the Influence of Race in Negroes, by Dr. Irving M. Snow, of Buffalo, N. Y., and Dr. George N. Acker, of Washington; A Case of Congenital Rickets, by Dr. C. W. Townsend, of Boston; Infantile Scurvy, especially its Differential Diagnosis, by Dr. J. Henry Fruitnight, of New York; An Aid to the Sterilization of Milk in Artificial Infant Feeding, by Dr. A. Seibert, of New York; Report of the Committee on the Nomenclature of Diseases of the Gastro-enteric Tract, by Dr. T. M. Rotch, of Boston; Report of the Committee on the Nomenclature of Diseases of the Mouth; Acute Pyelitis in Infancy, by Dr. L. Emmett Holt, of New York; Infantile Myxœdema, by Dr. William P. Northrup, of New York; and the Hæmorrhagic Disease of the Newborn, by Dr. C. W. Townsend, of Boston.

Œdema in the Newborn.—The April number of the *Revue mensuelle des maladies de l'enfance* publishes an article on this subject by M. Semet in which he remarks that œdema is often wrongly confounded with sclerema. The latter is nearly always fatal, but the former, although serious, may be cured. In the newborn œdema seems to occur especially in those who are weak, those who are born before the full term, and those subjected to bad hygienic conditions and cold. The principal cause seems to be a feebleness of the right heart, and an insufficiency of muscular contraction, especially on the part of the respiratory organs. Consequently thoracic aspiration can not be made with full strength, whence ensue defective hæmatosis and, consecutively, obstruction of the cardiac cavities, of the blood-vessels, and chiefly of the veins.

In all cases, the newborn are not well nourished, they refuse to nurse, and cry incessantly. When œdema appears, the skin becomes pale, waxy, and hardened, and pressure with a finger leaves a very distinctive imprint. The disease can be checked and cured in a few days, or infiltration increases and the œdema becomes generalized. The parts most frequently involved are the lower limbs; rarely the upper limbs. It is more frequently developed on the posterior aspect of the leg, afterward reaching the thighs, the pubes, and the feet, and if it spreads upward, the face of the upper limbs, the cheeks, the eyelids, and finally, the back. Œdema is rarely completely generalized.

The skin, which is pale, becomes purplish-red, and cyanosed on the face and on the extremities. At the same time it becomes harder and a digital impression persists if œdema is slightly marked, but is impossible to obtain if infiltration is accentuated. In the latter case there can sometimes be observed difficulty in the movements and a rather marked hardness of the skin, but no immobilization of joints inducing rigidity of the body. The skin is cold, and the thermometer indicates the extremely low temperature of 92° and 95° F. In some cases a remarkable temperature has been observed. Henning and Letourneau speak respectively of 71° and 68°. A. Robin remarks that the axillary temperature is always equal, if not superior, to the rectal temperature.

Œdema, if it is not very extensive, may be cured; if generalized, it is often fatal. Recovery occurs after four or five days, sometimes longer. Resorption takes place little by little, the circulation and respiration are slowly restored, the body becomes warm, and recovery gradually sets in. Pulmonary and gastro-intestinal complications are frequent.

The diagnosis of œdema is generally quite easy, although the affection is often confounded with sclerema, the nature of which is not well known. The latter is nearly always accompanied by athrepsia, and consists in a special hardening of the subcutaneous connective tissue. In the two diseases are found a certain number of similar phenomena, such as general feebleness, smallness of the pulse, which is sometimes scarcely perceptible, considerable falling of the temperature, and also, in some cases, hardening of the skin. Nevertheless, whereas in sclerema the skin can not be wrinkled, in œdema it can be pinched between the fingers, proving that there is infiltration in the subadjacent connective tissue. Sclerema attacks first the back, then the shoulders, and lastly the thighs. Œdema is more frequently found in the lower part of the abdomen, the genital organs, and the posterior face of the legs. Sclerema readily becomes generalized, and the hardness of the skin causes absolute immobility. With the exception of slight movements of the thorax, and sometimes also of the muscles of the face, the patient is in a condition which resembles cadaveric rigidity. Contraction also may exist in the lips and in the cheeks, and the rigidity of the muscles in this region may prevent suction. Nothing like this is found in œdema, and there is never seen sufficient rigidity to permit, as in sclerema, the child to be lifted bodily by any part without change of shape.

Infiltration may render the action of the joints difficult, but it never leads to tetanic rigidity. In œdema athrepsia is a rare complication, whereas it nearly always exists in sclerema.

The treatment consists especially in the employment of hygienic methods, of a tonic regimen, and of guarding against cold.

The Leucocyte's Lament.—We find the following verses in the March number of the *Bristol Medico-chirurgical Journal:*

The leucocyte was in a gland
With inflammation red,
He grasped a comrade by the hand
And with a sob he said:
"'Mid solitary follicles
I wend my weary way,
Deep down in crypts of Lieberkühn
Far far from light of day.
Alas! this aching nucleus
Can ne'er be free from pain,
While tissues hide my beauteous bride
I ne'er shall see again.
A rosy-red corpuscle she,
The pride of all the spleen.
Her like in this dark gland, I fear,
Will never more be seen.
A fierce bacillus captured her,
And reft her from my side;
Carbolic oil his plans did foil,
But ah! it slew my bride.
With pseudopodia feebly bent
And bowed down nucleus, I
Must turn to pus."—And, speaking thus,
He wandered forth to die.
Oh! lightly they'll talk of that leucocyte true
As they label and mount and degrade him,
But little he'll reck, when with aniline blue
They've stained and in Canada laid him.

The Philadelphia County Medical Society and the American Medical Association.—At a meeting of the Philadelphia County Medical Society, held on April 18th, the following resolutions were adopted:

Whereas, The code of ethics of the American Medical Association declares it derogatory to professional character for a physician to dispense or in any way promote the use of a secret nostrum, and the American Medical Association, by a resolution unanimously adopted at its meeting in 1892, forbade the advertising of such nostrums in its *Journal;* and

Whereas, The *Journal* of the association has continued to advertise such nostrums, and in defense of its course in this particular has published an anonymous personal attack on a member of the American Medical Association and of this society:

Resolved, That the Philadelphia County Medical Society respectfully demands that the trustees of the *Journal* shall, in their public official acts, respect the spirit and letter of its code of ethics, and that the columns of its *Journal* shall not be used for the anonymous personal abuse of its members in good standing.

Resolved, That a copy of these resolutions be transmitted to the Medical Society of the State of Pennsylvania, to the American Medical Association, and to the weekly medical journals.

[Signed.] T. B. SCHNEIDEMAN, *Secretary.*

The Communication of Typhoid Fever to the Fœtus.—In the *Presse médicale* for March 24th there is a summary of an account, published in the *Münchener medicinische Wochenschrift* by Dr. T. Janisewski, of a case in which a woman, who was eight months pregnant, was admitted into a hospital for typhoid fever, which was diagnosticated by a bacteriological examination of the stools. In twelve days she was delivered of a living child, but it died at the end of five days. At the post-mortem examination no lesions were found except moderate hypertrophy of the spleen. However, cultures from the lungs, the spleen, the kidneys, the intestine, and the mesenteric glands produced bacilli which had all the characteristics of Eberth's. In all respects they agreed with the culture made from liquid withdrawn by puncturing the spleen of a living person affected with typhoid fever.

Tricresol.—This substance, called in the trade "trikresol," has been made the subject of an experimental research by Dr. M. Charteris, professor of materia medica and therapeutics in the University of Glasgow, who reports in the *Lancet* for March 31st that the liquid is a mixture of orthocresol, metacresol, and paracresol, soluble in water in the proportion of from two to two and a half per cent. He finds that it is three times as strong as pure carbolic acid as a germicide and only a third as poisonous. Consequently, he remarks, its advantages for surgical purposes are very pronounced, and in all probability some combination of it with an alkaline base will in the future be prepared which may with safety and profit be administered internally in specific infectious diseases.

The District Medical Society of Union County, New Jersey.—At the annual meeting, held in Plainfield, on Wednesday, the 11th inst., the following officers were elected: President, Dr. Norton L. Wilson, of Elizabeth; vice-president, Dr. W. E. Cladek, of Rahway; secretary, Dr. E. B. Grier, of Elizabeth; treasurer, Dr. F. Westcott, of Scotch Plains; reporter, Dr. S. J. Keefe, of Elizabeth.

The Cleveland Medical Society.—At the second quarterly meeting, on Friday evening, June 22d, Dr. William Pepper, of Philadelphia, will deliver an address, and on the following morning he will hold a clinic in one of the Cleveland hospitals, open to the profession at large.

The Medical Department of the University of Cincinnati.—The Cincinnati College of Medicine and Surgery has been affiliated with the University of Cincinnati under the title of the Medical Department.

THE NEW YORK MEDICAL JOURNAL, May 5, 1894.

Lectures and Addresses.

LECTURES ON THE DIAGNOSIS OF ABDOMINAL TUMORS.

By WILLIAM OSLER, M. D.,
PROFESSOR OF MEDICINE, JOHNS HOPKINS UNIVERSITY.

Lecture V.—Tumors of the Intestine, Omentum, and Pancreas; Miscellaneous Tumors.

I. *Tumors of the Intestine.*—Cancer, the common cause of tumor, occurs most frequently (apart from the rectum) in the cæcum and the sigmoid, hepatic, and splenic flexures of the colon. Not one of the three cases which have been under observation presented a typical group of symptoms, but singly and together they illustrate many interesting features of the disease. In the first place, the affection may be latent, revealed at autopsy alone, or the early and indeed the chief symptoms may be due to the secondary tumors. The first case illustrates very well the latency of the disease. Without intestinal symptoms, for some months after he came under observation the sole objective feature was the progressive enlargement of the liver. Only six weeks before his death, after he had become greatly emaciated, we discovered a tumor in the right iliac region, and subsequently he had hæmorrhage from the bowel.

Case XLIII. *Cancer of the Cæcum and Colon; Latent Course; Enormous Secondary Enlargement of Liver.*—John R., aged twenty-nine years, admitted February 6, 1892; under observation until September 25th. The family history is good. The patient was healthy and strong until four years ago, when he had severe malaria. For eight months prior to his admission he had not been very well, and had had irregular pains in the abdomen. During the past eight months he has been pale, has felt weak, has not been able to work, and on several occasions he has been slightly jaundiced. His appetite has been good; bowels regular; has had no diarrhœa. For several months past he has noticed that the upper part of the abdomen was swollen and tender to the touch. On admission, the patient was pale, but looked well nourished; no fever; pulse, 86. The lower thoracic zone is much expanded, particularly on the right side. The epigastric and hypochondriac regions bulge in a very prominent manner, and there is a rounded mass, nine centimetres in transverse extent, which extends from under the ribs on the right side. In the median line the edge is clearly defined, and reaches to within four centimetres of the navel. To the left it extends far over beyond the parasternal line, and to the right deep into the lumbar region. The percussion over this large mass is flat and continuous with the liver dullness, which begins in the median line at the base of the xiphoid, in the nipple line at the sixth cartilage, and in the axilla at the seventh. Although there was no fever and no definite history of any intestinal trouble, the patient's age and good condition seemed against the diagnosis of cancer of the liver. Accordingly, an aspirator needle was thrust in at the prominent part, but only blood obtained. Under observation the liver evidently increased in size, and there seemed to be no question that it was a new growth. The question then arose as to the primary seat of the disease. The stomach symptoms were insignificant, he had no vomiting, the appetite was good, and a test breakfast was readily disposed of. Subsequently, in August, very careful examination of the abdomen revealed a hard mass low down in the flank. It was usually ill-defined, but on several occasions Dr. Thayer thought that it was quite distinct. There was no diarrhœa; no special change in the fæces, which were always well formed. He remained under observation outside the hospital during the summer. The liver tumor did not increase very much in size. He became progressively weaker and very much emaciated. Two weeks before death he passed two large stools containing clots of blood. He became extremely emaciated before his death.

Autopsy.—The liver weighed seven thousand two hundred grammes; the right lobe was much disfigured, and presented numerous nodular tumors with elevated margins and depressed centers. A distinct groove marked off the anterior margin of the right lobe from the rest of the organ. On section, secondary cancerous nodules were found scattered through the entire organ. The primary growth was found to be at the head of the cæcum and the beginning of the colon, which presented an extensive fungating mass, softened and necrotic on the surface. The mesocolon was thickened and the glands much involved. Microscopically the tumor proved to be a cylindrical-celled epithelioma. Extensive secondary nodules were scattered through the lungs.

In the following, by far the most interesting and instructive case of the series, intestinal symptoms were absent throughout, and the presence of a solid, firm mass deep in the right side led us to think at first that there was a renal tumor. I give you the notes just as I dictated them from day to day, as they illustrate the erroneous diagnosis, and the gradual development of features which led to its revision.

Case XLIV. *Tumor in Right Flank; Suspected to be a Renal Sarcoma; Subsequent Development of Dilatation of the Stomach and Signs of Tumor in the Bowel.*—Thomas B., aged thirty-two years, admitted August 3, 1892, complaining of pains in the abdomen. There was nothing of special moment in his family history. Present illness began about eighteen months ago with griping pains in the abdomen, attacks of which occurred from time to time and were attributed to indiscretions in diet. On the voyage to this country, ten months ago, he was very seasick, and had a great deal of pain in the abdomen; and then for the first time he noticed a hardness or lump on the right side. The bowels were, as a rule, constipated. He has never passed blood in the stools or in the urine. For some months he has been gradually losing in weight, and has been getting pale and weak. When in good condition he weighs one hundred and seventy-seven pounds; he now weighs one hundred and twelve pounds.

Present Condition.—Patient is a tall, well-built man, pale, scarcely cachectic. The tongue is moist, slightly coated; pulse 104, of fair volume. The examination of the thoracic organs is negative. The abdomen is symmetrical, but looks a little fuller in the right flank. The right hypochondriac and lumbar regions are filled with a firm, somewhat irregularly rounded mass, which on bimanual palpation can be readily moved up and down. On making firm pressure with the left hand in the right renal region the mass becomes apparent beneath the skin just to the right of the navel. To the left it extends almost to the middle line; the lower border is three centimetres below the transverse navel line. Both the lower and the left borders are rounded, but toward the right, just beneath the tip of the eleventh rib, there is a distinct nodule to be felt. In its anterior part it can be separated distinctly from the liver both by palpation and percussion, but in the anterior axillary line the tumor passes beneath the ribs, and the dullness is here continuous with that of the liver. On percussion there is resonance over the tumor mass to the left of the nipple line. The general situation of the tumor is indicated in the annexed chart. There are no glandular enlargements. The spleen is not palpable and the dullness is almost obliterated.

The patient has no sweats, no cough. There is a leucocytosis, the white corpuscles numbering over twenty thousand to the cubic millimetre; hæmoglobin, forty-one per cent.; red blood corpuscles slightly over four million to the cubic millimetre. The urine (many examinations) has usually been clear, acid; specific gravity, 1·012; at first no albumin, but subsequently slight traces. No sugar; microscopically, a few blood-cells, but as a rule, even after centrifugalizing, neither casts nor blood-cells were found. The sediment obtained was also examined for tubercle bacilli, with negative result. The temperature was at times a little above normal, and on the evening of the 20th of August he had a chill, the temperature rising to 103·5°. On the 6th of September a medium sized aspirator needle was thrust upward and backward beneath the twelfth rib, and a little blood-stained fluid removed, which contained round cells twice the size of leucocytes. The needle seemed imbedded in the firm substance. The patient objected to an exploratory operation.

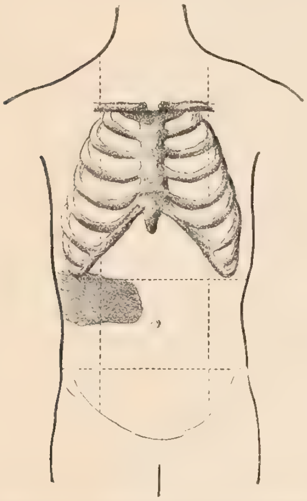

FIG. 33.—Outline of the tumor mass in Case XLIV.

The situation and shape of the tumor, the mobility, and the readiness with which it could be pushed forward by pressure from behind pointed to a renal origin. The nature of the growth was less certain. If he is correct in dating the first symptoms as far back as eighteen months the tumor has not attained the size usually reached by new growths of the kidney within this time. There has also been no blood in the urine. The single chill does not speak specially against new growth. Can it be tuberculous nephritis? The family history is good; the urine is and has been clear; there is no involvement of the epididymis, and fever has not been a marked feature. If the tumor were due to saccular dilatation following occlusion by tuberculous or calculous disease, certainly the aspirator would have withdrawn purulent fluid, and there would have been at some time pus in the urine. The rapid loss in weight points strongly in favor of new growth.

October 12th.—The patient was shown in clinic this morning. The emaciation has progressed; he has had for ten days much more fever, and a chill on the sixth in which the temperature rose to nearly 104°; on the seventh, eighth, and ninth it remained between 102° and 103°. There are no special changes in the urine. He has been at times constipated, but the stools show nothing peculiar. The tumor mass has not increased materially in size, though perhaps it reaches a little further toward the navel.

The patient says that he notices flatus bubbling in the vicinity of the tumor, and that it divides into, as he expresses it, two or three portions. The hand placed on the tumor experiences occasionally a feeling as if gas was escaping through it, and the left half is resonant; but this might be due to the presence of the colon over the mass.

This morning, with the students, the various probabilities of renal sarcoma, or tuberculosis, or calculous pyelitis were discussed. The state of the urine and the failure of aspiration to draw fluid seem opposed to the latter conditions. The chills and fever were not thought to be inconsistent with sarcoma.

The question was also discussed as to whether it really was a renal tumor, and whether it might not be associated with the liver or with the hepatic flexure of the colon. It did not seem possible, with the evidence at our disposal, to reach a definite diagnosis.

Since the above note of October 12th there have been several developments in this case.

15th.—For the past two days the patient has had a great deal of vomiting, often bringing up large quantities. Last night he vomited eight hundred cubic centimetres of brownish fluid containing half-digested food. The reaction was acid, the odor rancid, and tests for free hydrochloric acid were negative.

16th.—Ewald's test breakfast given this morning, and withdrawn fifty minutes later, gave nearly three hundred cubic centimetres of a slightly grayish, muddy fluid, containing comparatively little food matter. It was acid in reaction, odor rancid and sour, turned congo paper blue, and gave a very distinct rosy-red color with the phloroglucin-vanillin solution. Microscopically, there were fat crystals, undigested food stuffs, numerous bacilli, and yeast cells.

17th.—The vomiting has continued during the past twenty-four hours, and he does not look so well to-day. The tumor mass occupies the right hypochondriac region, extends into the right lumbar and umbilical regions, but not into the epigastric, reaching apparently to within about two centimetres of the navel. Below, it extends exactly eight centimetres from the costal margin in the nipple line. The greatest prominence is just below the point of the tenth rib. On first palpating it this morning there was at the lower margin a prominent rounded, ridge-like mass, firm and hard, which gradually disappeared, feeling as if it were a tubular, muscular structure in contraction. Again this morning gas was felt bubbling through the mass. Percussion over it gave flat tympany; slight change noted in rolling the patient over on the left side. At a second visit to-day there were noticed for the first time waves of peristalsis crossing the upper abdomen from left to right, and the outlines of the stomach could be distinctly seen, the lower border reaching to the navel. At the time of the passing of the waves the walls of the stomach became firm, and bubbles of gas could be felt passing through the tumor.

20th.—The signs of dilatation of the stomach have been for the past few days unusually distinct. He has had vomiting of large quantities of liquid. The amount of urinary secretion is very scanty. He sank gradually and died on the 20th.

Autopsy.—By Dr. Flexner. On opening the abdomen the stomach was seen to be greatly dilated, reaching considerably below the level of the navel (Fig. 35). In the right hypochondriac region a tumor mass was adherent in part to the anterior abdominal wall, just between the costal margin and the crest of the ilium. Just below the hepatic flexure of the colon there was a tumor the size of an orange completely encircling the bowel. It was seven centimetres in length and eight centimetres in circumference. The coats were uniformly infiltrated and the tissue looked infiltrated with colloid. The inner surface was ulcerated and the lumen of the bowel not here narrow. The cæcum and ascending colon were opened *in situ*. At the hepatic flexure the tumor mass was adherent to the right lobe of the liver and behind was attached to the kidney. The finger, introduced into the colon at this region, entered a number of pockets, one of which directly led into the liver substance. On its posterior surface and to the right the tumor was closely united to the curve of the duodenum, into which it had grown in such a way as to cause a distinct narrowing. The mucous membrane of the duodenum was ulcerated from the central part of the tumor, but was intact elsewhere. The stomach was greatly dilated; the mucous membrane smooth. The pylorus itself and first part of the duodenum were greatly stretched; the groove between them is well seen in the figure. The finger could be passed into the duodenum, but the narrowed lumen would not more than admit the tip of the little finger. The liver showed numerous secondary nodules of cancer. The mesenteric glands were enlarged and contained metastatic nodules.

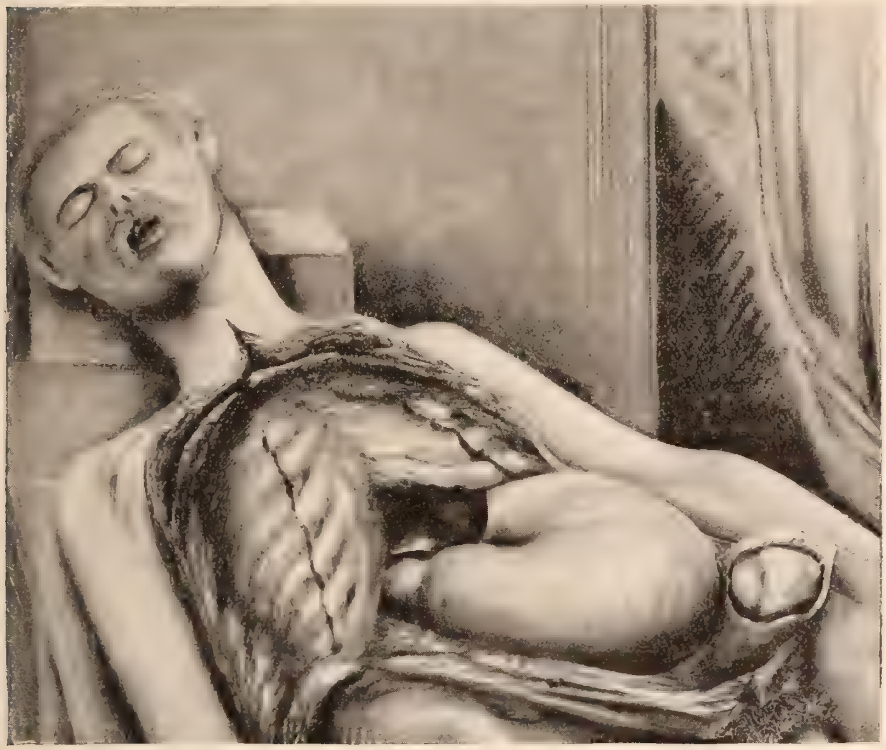

Fig. 34.—Cancer of the colon; dilatation of the duodenum and stomach in Case XLIV.

The third case presented a very prominent movable tumor which, from its general characters and situation, seemed to be connected with the bowel, though the intestinal symptoms were here also quite in the background.

Case XLV. *Tumor in Right Flank; Removal of Growth in Cæcum and Ascending Colon.*—Sylvester H., aged sixty years, admitted October 15th, complaining of a lump in the abdomen. He has been a very healthy man. For two years past has had slight pain after eating, with nausea and constipation.

His present illness began about three months ago with troublesome constipation, and three or four days would pass without a movement from the bowels, and the fæces would be hard and lumpy. He took medicine for it, since which time the bowels have been rather loose, the stools yellow and containing slime, but never blood. No tenesmus, no cramps. Five weeks ago he had an attack of vomiting, followed by a second attack a week later; brought up sour material; no blood. In the past three months he has lost a great deal in weight, and has become, he thinks, a little pale. He has been short of breath on exertion, and lately the feet have been swollen.

Present Condition.—Patient looks a little pale, but is fairly well nourished; no fever; tongue slightly furred. Abdomen is full, and about six centimetres to the right of the navel there is a projection beneath the skin, uninfluenced in position by the respiratory movements. On palpation this is felt to correspond to a rounded nodular mass, feeling of about the size of a cricket ball, situated midway between the navel and the anterior superior spine of the ilium. It feels very superficial; is not tender; is very hard; and one or two ridges can be felt upon it. There are no changes in its consistence. On deep inspiration it descends slightly. It is freely movable and can be pushed over as far as the navel. No gas is to be felt to bubble through it. On light percussion there is a flat tympany over it.

As the patient had had very few intestinal symptoms and had had dyspepsia for several years, with recently two attacks of vomiting, the attention was naturally directed, in the first place, to the condition of the stomach. Palpation was negative in the region of the pylorus. There was no *clapôtage.* The organ did not appear to be dilated. The upper limit of resonance was at the fifth rib in the nipple line, and the lower limit above the navel. On October 17th the tests for free hydrochloric acid were negative. On the 21st it seemed that the stomach tympany was somewhat more extensive than before. There were no peristaltic waves. On several occasions a test breakfast was given, and on October 26th the mucus withdrawn was blood-stained; no free hydrochloric acid. The tumor could be readily separated from the liver and could be moved far down into the right iliac fossa. While the symptoms in this case pointed rather to disease of the stomach, the situation and general character of the tumor were those of an intestinal growth. The stomach, too, seemed somewhat relaxed, and the absence of free hydrochloric acid was suggestive.

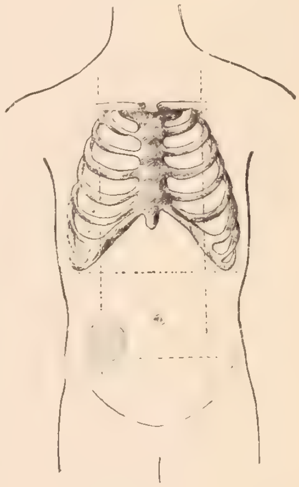

Fig. 35.—Situation of the tumor in Case XLV.

On November 7th Dr. Halsted operated and found that the tumor occupied the cæcum and the commencement of the ascending colon. It was readily removed. The patient seemed to do very well, taking his nourishment and gaining in strength until the 13th, when, after an attack of nausea and coughing, the stitches gave way and about two feet and a half of the small intestine protruded. He became very restless, gradually sank, and died the same day. The tumor was a cylindrical-celled epithelioma, involving the entire circumference of the gut, but excavated and not narrowing in any way the lumen of the gut. The autopsy showed an interesting feature—namely, the presence also of a cancer on the posterior wall of the stomach and of a second small tumor mass in the jejunum.

In the diagnosis of cancer of the intestine the following points may be taken into consideration. In comparison with the subjects of malignant disease of the stomach very many of the patients are young; thus you have noticed that Case XLIII was only twenty-nine years of age, and Case XLIV was only thirty-two. Intestinal features are present in a majority of cases, though they were by no means suggestive in the patients who have been under our observation. Griping, colicky pains are common, even without the signs of obstruction. With narrowing of the lumen of the gut very characteristic features occur—attacks of severe griping pain, abdominal distention, the presence of active, sometimes visible peristalsis in the distended coils of bowel, and, if the condition persists, vomiting and all the signs of intestinal obstruction. In the case of Sylvester H., I called your attention repeatedly to the fact that the intestinal symptoms depended largely upon the state of the lumen of the bowel at the seat of the tumor. If fungous masses project and cause more or less narrowing, colicky pains and constipation are inevitable; but, on the other hand, as the tumor grows, if there is necrosis of its surface, with excavation, neither pain nor constipation may be present. Diarrhœa and the passage of much slime with the fæces are not infrequent symptoms. Hæmorrhage is also common. The blood is not often in large quantities; when the tumor is in the sigmoid flexure it may be bright and very little changed, but in growths about the cæcum it is often much altered before it appears in the stools. There are cases in which constant loss of small quantities of blood is a very special feature, and the patient becomes profoundly anæmic. Sloughy fragments of the tumor may sometimes be passed in the fæces.

A cachexia develops progressively but with very variable rapidity. It may, however, be well marked before any features have arisen suggestive of intestinal trouble. The loss in weight may, too, be slight, even after the tumor has persisted for many months. There is at present a patient in Ward C with a tumor in the right iliac region, which has persisted for nine or ten months, and upon the nature of which very many opinions have been expressed. She is well nourished, but profoundly anæmic. It did not seem possible from the symptoms, general or local, to make a definite diagnosis, but an exploratory operation showed an extensive new growth in the cæcum. Another patient, who had repeated small hæmorrhages, developed an extreme anæmia, with retention of the general fatty panniculus. When extensive secondary growths develop, as in Case XLIII, the cachexia may be profound. The tumor in cancer of the intestines may be readily and easily discovered—indeed, evident on inspection, as in Case XLV. On the other hand, as in Case XLIII, it may not be until the terminal stage of the disease that the growth is found. A small tumor of the hepatic or splenic flexure of the colon may escape repeated examinations. Mobility is a special feature of growths in the large bowel. Large tumors, however, of the cæcum may be quite fixed. The most movable growths are those connected with the sigmoid flexure. Variability in size is also a marked character, and at one examination the mass may appear as large as the closed fist or even two fists, and the next day it appears not larger than a small apple. These variations are due largely to the presence of fæcal masses in the vicinity. Two very important features in the intestinal tumor may sometimes be detected on careful palpation—namely, the hardening during contraction of the hypertrophied wall in the vicinity of the growth, and the bubbling of gas through the tumor, which may be heard as well as felt. This latter feature drew our attention to the possibility of the tumor in Case XLIV being associated with the colon. The intestinal symptoms above referred to and a progressive cachexia are generally sufficient to warrant a diagnosis.

II. Omental Tumors.—In two cases a rolled, thickened omentum formed a definite tumor in the upper portion of the abdomen. I will not enter into full details, but just mention the cases in abstract.

Case XLVI. *Pleuro-peritoneal Tuberculosis; Ridge-like Tumor in the Epigastric Region.*—A man, aged thirty years, admitted May 9, 1893, with ascites. In October he had had shortness of breath with swelling of the legs and abdomen. He improved gradually, but the ascites has persisted and on admission there were signs also of effusion in the right pleura. In the abdomen there was an ill-defined resistance, a hand's breadth in width, at the junction of the umbilical and epigastric regions; below it terminated in a well defined, hard border, which could be very easily felt, and was indeed at first thought to be the edge of the liver. On percussion there was a flat tympany above the hard transverse ridge. There was in this region also a very well marked peritoneal friction rub. The history of the case, the involvement of pleura and peritonæum, and the existence of this transversely placed tumor mass in the upper abdominal zone led to the diagnosis of tuberculosis. Dr. Finney made an exploratory operation and drained the peritonæum. The omentum was rolled up, thickened, and attached to the transverse colon. The patient did well and was discharged from the hospital greatly improved.

Case XLVII. *Chronic Proliferative Peritonitis; Thickened Omentum.*—In this patient the tumor was more interesting and unusual, though I must say no diagnosis was made. I refer to it especially because I have been talking to you so much in the ward class about chronic proliferative peritonitis in connection with the case of the little girl with a visibly pulsating liver. Without going into unnecessary details, the patient, aged about fifty-five years, was admitted with suppurative cellulitis of the left leg which had come on in connection with an ascites of some weeks' duration. His condition was very serious, and one for which we could not do very much. He gradually sank, and died ten days after admission. The abdomen was persistently distended, and we never arrived at a definite opinion as to the cause of the dropsy. The parietal peritonæum was adherent to the anterior surface of the colon and to the omentum for a distance of 3·5 centimetres. The omentum was represented by a thick fold, seven centimetres in vertical by nineteen centimetres in transverse extent, the upper part of which was converted into a white, shining, leathery-like structure, not, however, rolled or curled upon itself. Similar thickenings were present over the anterior surface of the colon. The intestines, particularly the loops of small bowel, were bound together by dense adhesions, separated with the greatest difficulty, and there were patches of thickening on the mesentery. There was a condition of chronic perisplenitis and perihepatitis. There was a thrombus in the portal vein.

As in the chronic tuberculous peritonitis, this simple proliferative form may pucker the omentum into a definite tumor, lying athwart the upper zone of the abdomen. Encapsulated exudate may also form tumor-like masses. More frequently, however, the recurring ascites simulates cirrhosis of the liver. In one way the proliferative peritonitis may produce a very extraordinary tumor, of which I have reported an example.* So great may be the thickening of the mesentery that the whole bowel is shortened, and the coils of intestine matted together may form a mass the size of a cocoanut firmly bound to the spine.

III. TUMORS OF THE PANCREAS.—Two cases of disease of this organ came before me for diagnosis—one a cancer, the other possibly a cyst.

The cancer case you will remember, as I demonstrated the specimens after a ward class early in the session. A reasonable probability may sometimes be reached in the diagnosis. The following may be mentioned as suggestive points: Rapid emaciation with early, intense, and persistent jaundice; dilatation of the gall bladder, fatty stools, glycosuria, salivation, and the presence of a tumor between the umbilicus and ensiform cartilage. Nausea and vomiting, though often present, are variable features. Beginning usually in the head of the pancreas, the growth early compresses the common duct and causes obstructive jaundice. A persistent, intense icterus may also result from compression of the duct in the gastro-hepatic omentum by infiltrated glands, secondary to cancer of the stomach, to invasion of the ducts themselves by cancer, and by stenosis of the common duct, rarely by gallstones without any complication. The emaciation is rapid, and stress is laid by some writers upon an excessive cachexia. There may be very little pain throughout the illness; in some cases, however, attacks of colic occur. A dilated soft gall bladder, while not in itself of special import, is often suggestive, taken in connection with other features. In the primary cancer of the bile passages, which also causes an early and intense icterus, the gall bladder, if enlarged, is more often hard and firm. Disturbance of the function of the organ may be manifest by (1) the presence of fat in the stools (even a definite stearrhœa), which is not a constant symptom, but of value when present; (2) by glycosuria, which is also not constant. Salivation is sometimes present, and Dr. Lainé, of Media, has called my attention to several cases in which this symptom was present, and in which the diagnosis of cancer was confirmed by autopsy.

The tumor in cancer of the pancreas is not always to be felt, and, as in Case XLVIII, there may be ascites, which renders it difficult. The mass may be between the navel and the margin of the right lobe of the liver, as in our case. It is deep seated, not mobile, variable with the degree of distention of the stomach and intestines. The involvement of the adjacent parts may give to it the characters of a deep-seated, dense, massive tumor. Bear in mind that in very thin-walled persons, particularly in women with enteroptosis, the pancreas can be felt with distinctness, but the conditions are very exceptional in which it could be mistaken for a tumor.

CASE XLVIII. *Intense Jaundice; Progressive Cachexia; Ascites; Tumor in Epigastric Region.*—E. V., aged thirty-four years, admitted to Ward C, October 24th, complaining of dyspepsia and jaundice. Family history is good.

With the exception of chills and fever fifteen years ago, he has been a very healthy man. For a year he does not think he has been in his usual health, feeling tired and out of sorts; but has had no nausea and no vomiting. For about two months he has been losing rapidly in weight, and has had uncomfortable sensations in the abdomen after eating. A month ago jaundice developed, and has gradually become very intense. He has had no severe pain. The upper part of the abdomen has been a good deal swollen. He came to hospital on account of the jaundice, weakness, and progressive emaciation. Patient presented all the characters of severe obstructive jaundice. He is much emaciated; skin everywhere of a deep yellow color; no fever; pulse, 76. The abdomen is distended, particularly in the upper zone. It is tympanitic in front and dull in the flanks, with well-marked movable dullness. No peristalsis seen in epigastric region. The prominent tympanitic zone extends as low as the umbilicus. On deep pressure in the right epigastric region, between the navel and the costal margin there is a hard nodular mass, difficult to outline, owing to the distention. There is enlargement of the lymph glands. The test breakfast showed the presence of free hydrochloric acid, and the stomach did not appear to be dilated. Examination of the heart and lungs was negative. On October 28th and on November 1st he had some stomach distress, for which lavage was practiced, and a quantity of dark, coffee-ground-looking material was washed out. On November 2d it was noted that the distention in this case was unusual; no coils were to be seen; no peristalsis. The tympany extended to the fifth rib on the left side, and a little above the costal margin on the right side. The stools were clay-colored, rather firm, and he constantly had to take purgative mineral waters. Microscopically there was sometimes a good deal of fat. There was never any sugar in the urine, which had the usual characters of this secretion in obstructive jaundice.

The intensity of the jaundice, the rapid emaciation, without enlargement of the liver or recognizable disease of the stomach, and the presence of a deep-seated tumor mass led to the suggestion of pancreatic disease. The tumor was difficult to feel satisfactorily owing to the very great distention of the epigastric region, and as the patient's physician had suggested that it was possibly due to gallstones, and as he was himself very anxious that something should be done, Dr. Halsted performed an exploratory operation. More fluid was found in the peritonæum than we had expected. The remarkable distention in the epigastrium was due to the floating up on the top of the fluid of the colon and small bowel. The gall bladder was found to be dilated; but the mass which had been felt was a deep-seated growth in the situation of the head of the pancreas. The patient was a good deal relieved by the operation, but no essential change took place, and he gradually sank, becoming very intensely emaciated, and died November 18th.

The post-mortem by Dr. Flexner showed the head and body of the pancreas to be the seat of a tumor mass. The growth had infiltrated the wall of the duodenum, and the posterior wall of the stomach was involved directly from the tumor in an area eight centimetres in extent. The gall bladder and ducts were much dilated with dark, thick bile.

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* Tuberculous Peritonitis, *Johns Hopkins Hospital Reports*, vol. ii.

To the case of possible cyst of the pancreas I shall only just refer, and show you the chart, as Dr. Halsted, in whose practice it occurred, will publish it with full details.

The man (Case XLIX), aged about thirty years, was admitted April 14, 1893, with a greatly swollen abdomen, measuring over forty inches in circumference. His illness dated from January, 1890, when, without any fall or injury, he had for three days severe colic, not associated with vomiting or with jaundice. A month later he had a second attack, also lasting three days; in this one he vomited, and noticed for the first time swelling of the abdomen. Then the attacks recurred frequently, two or three a month, each time with nausea, vomiting, and colic, and the abdomen progressively enlarged until July, 1890, after which he had no further attacks of colic. The abdomen remained large, but his general condition was good and he was able to do light work. In July, 1892, he fell out of a wagon, jumped up, got into it again, but immediately had a severe attack of colic, and had to go to bed in a hotel near by for two days. He had nausea, vomiting, and great pain. The swelling gradually disappeared, and in ten days the girth of the abdomen decreased from forty-three to thirty-one inches. He had profuse diarrhœa, but he does not think there was pus or blood in the stools. He gained in weight rapidly, and went to work. He was married in October, and remained well until January of this year, when he felt his trousers were tight at the waist; and during the past three months, without colic, vomiting, or jaundice, the abdomen has gradually increased in size.

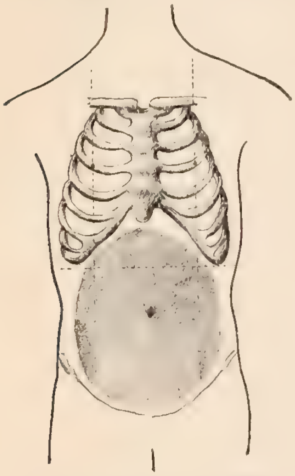
Fig. 36.—A cyst in the abdomen, probably of the pancreas (Case XLIX.)

A truly remarkable history! The man was unusually intelligent, and insisted that his statement about the complete disappearance of the tumor after the fall from a wagon was correct. When he came under observation the entire abdomen was distended, particularly in the upper zone; the ensiform cartilage and the lower ribs were everted. The distance from the tip of the ensiform cartilage to the navel was 21·5 centimetres; from the navel to the pubes, 16·5 centimetres. The wall was tense and elastic; fluctuation was readily obtained. The percussion outlines are given in the chart. There was resonance only in the epigastric angle, in the hypochondriac regions, and in the flanks. In the right inguinal region there was an elevated ridge. Dr. Halsted incised and drained the cyst, which was found adherent to the abdominal wall. Eighteen litres of a dark, coffee-colored fluid were removed, which was alkaline in reaction, contained granular *débris* and much altered blood, fresh red blood-corpuscles, and a few large cells deeply stained with blood pigment.

The patient had a tardy convalescence, but ultimately left the hospital in good condition. The diagnosis of pancreatic cyst in this case rests rather on general than special grounds. The gradual development with attacks of colic, the persistence without serious damage to the health, the disappearance once after a fall, the gradual reaccumulation—all point to a retention cyst. There were no features pointing to loss of the function of the pancreas—neither fatty stools nor glycosuria. Large pancreatic cysts may fill, as did this one, the entire abdomen; in long-standing cases the contents consist, as a rule, of altered blood, and while an amylolytic ferment, which is not in any way distinctive, may exist, the trypsin, which would be definite and conclusive, is usually not present.

Many of the cases described as cysts of the pancreas are really instances of hæmorrhage into the lesser peritonæum. Let me refer you to Mr. Jordan Lloyd's suggestive and timely contribution.* From four of his conclusions you may gather the gist of the whole matter:

1. "That contusions of the upper part of the abdomen may be followed by the development of a tumor in the epigastric, umbilical, and left hypochondriac regions."

2. "That such tumors may be due to fluid accumulations in the lesser peritoneal cavity."

3. "That, when the contents of such tumors are found to have the property of rapidly converting starch into sugar, we may assume that the pancreas has been injured."

4. "That many such tumors have been regarded as true retention 'cysts of the pancreas,' and that this opinion has been formed upon insufficient evidence."

(*To be concluded.*)

Original Communications.

A CASE OF TRAUMATIC CHORDEE.*

By W. M. NELSON, M.D., C.M.,
SYRACUSE, N. Y.

The deformity I desire calling to your attention this evening is one that must be rather uncommon, as the greater number of standard works in the English language on surgery and genito-urinary disease make no mention of it, and the few that do merely state that such a condition has been met with, and have little or nothing to say regarding its ætiology, pathology, and morbid anatomy. Morrow's *System of Genito-urinary Diseases*, which is supposed to mirror the best thought and knowledge of this branch of science, devotes but a few lines to this deformity and its causation.

Dr. F. Tilden Brown, author of the article mentioned, says that Otis has reported three cases following internal urethrotomy, all of which got well in from two months to a year, but that he (Dr. Brown) has seen several cases of the same character that after slight improvement bade fair to remain during life. He states that these curvatures are due to a cavernitis of chronic course with exudation into the meshes of the cavernous tissue, which exudation may be unilateral or bilateral, and, of course, producing lateral and upward curvatures respectively.

In the *American Text-book of Surgery* is found a statement that escape of blood into spongy tissue is sometimes followed by upward, lateral, or downward curvature, that may be so marked as to interfere with or render coitus impossible.

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* *British Medical Journal*, November 12, 1892.

† Read before the Syracuse Academy of Medicine, April 3, 1894.

By "spongy tissue" I suppose is meant the erectile tissue of both corpus spongiosum and corpora cavernosa, as loss of function of a portion of one of these bodies alone would hardly produce three different forms of curvature.

The only complete exposition of the ætiology and pathology of disease of the erectile bodies of the penis is given by Ernest Finger in his work on *Syphilis and the Venereal Diseases*, published in 1892. Before giving a brief *résumé* of what he has to say about cavernitis, it is as well to explain that he does not recognize a corpus spongiosum, but groups the erectile tissues of the penis under the one term—corpora cavernosa.

"If the blennorrhagic process be very acute, or the parts subjected to violent coitus, catheterization, strong injections, etc., the inflammation of the mucous membrane may extend by continuity to the corpus cavernosum itself, causing inflammation, suppuration, or necrosis of that part. If the process proceeds from the follicles, it is customary not only to have a perifollicular inflammation but also an inflammatory infiltration of the cavernous body. When this last is the result of extension only it is apt to be circumscribed, but when the cavernous tissue is directly affected the inflammation is more apt to be diffuse.

"More ominous than the peri-urethral are the cavernous infiltrates proper, which may localize themselves in all three corpora cavernosa of penis. They are developed as moderately firm, seldom distinctly circumscribed infiltrates of one or other corpus cavernosum, running a slow course and accompanied by acute inflammatory phenomena. They rarely affect a whole corpus, usually only a part of it, and appear as indistinctly circumscribed, painful knots which increase the volume and alter the consistence of the corpus itself, and place it in a condition of partial erection, and, since the other two corpora are flaccid, there occurs an arching of the half-erected penis, whose convexity is formed by the affected corpus.

"If all three corpora take part in the inflammation, priapistic erection of the whole penis results. After disappearance of the inflammation the infiltrate may be absorbed and the integrity of the tissue restored. On the other hand, the infiltrate may remain, become organized, and induration of the affected corpus result.

"Finally, the infiltrate may become purulent and break in any direction, and after healing there remains, of course, partial destruction of the corpus. Induration or abscess formation may make a corpus partially or wholly functionless, so that the erection is incomplete and a bending of the penis toward the affected corpus cavernosum results."

After these few preliminary remarks, I will attempt to describe the condition obtaining in a young man now under my care, and trust that the photographs to be passed round will counterbalance the defects in my word picture.

W. W., aged twenty-three years, was referred to me by a fellow of this academy on January 11, 1894. The patient stated that there was a downward curving of the penis during erection, and that this condition had first appeared three weeks after an internal urethrotomy which was performed in a New York hospital, May 17, 1890. He also complained of frequent nocturnal emissions that were seldom the result of lascivious dreams, slight discharge of muco-pus, inability to project his urine—the stream being of the waterfall character—lassitude, vertigo, loss of ability for consecutive thought, tachycardia, lumbar pain, and occasional intercostal neuralgia. He was also practically impotent, due not only to the curvature but also to the orgasm taking place prematurely.

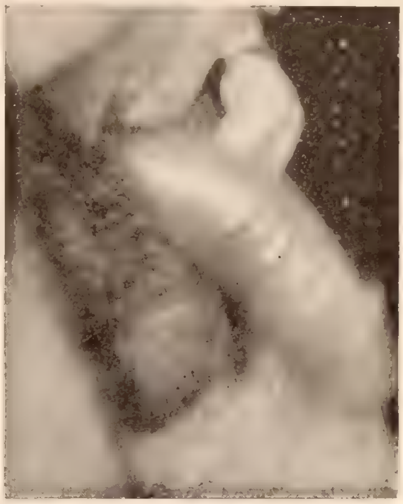
FIG. 1.—Incomplete erection (showing corrugation).

Examination.—A No. 30 (French scale) sound passed by its own weight. Meatus large, but neither sunken nor abnormally placed. Secured an erection by the patient's rubbing in a little simple ointment, when the penis assumed the curves shown in photographs.

Neither while the sound was in the urethra nor during erection could anything abnormal be detected by palpation.

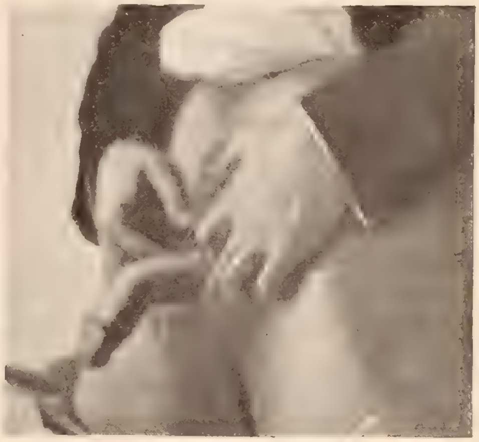
FIG. 2.—Complete erection.

Endoscopic Examination.—Bulbous portion of the urethra of a deep livid red, finely granular, or stippled and partially covered with muco-pus, which was removed easily.

On reintroduction of tube the membranous urethra was seen to be in a somewhat similar condition, but with smoother surface. The pendulous urethra was fairly normal for the first couple of inches from the meatus, but beyond that it was first congested, then faintly stippled, and finally merged into the condition of the bulbous.

Some rigidity of the congested and stippled pendulous urethra was shown by the depth of funnel produced by the tube. No cicatricial tissue observed anywhere.

The following is a transcript of the hospital record of this case:

May 16, 1890.—Examination with bulbs: Stricture tissue, caliber 22, is found from an inch and three quarters to three inches and a quarter from the meatus.

17th.—Ether anæsthesia; urethra irrigated. Bulbs again used, with following results: Meatus, 30; stricture from an inch and a quarter to three inches. Meatus incised with meatotome, and urethra, from an inch and a quarter to three inches and a quarter from the meatus, was cut to 32 by an Otis urethrotome.

Stricture tissue dense, and several cuts were made before the instrument could be turned to 32. The 30 bulb stopped at three inches and three quarters, and this was cut to 34. Sounds were then used, but 33 would not pass. A 33 bulb showed stricture at two inches and a quarter, and this was cut to 33.

Sound No. 34 was passed, and will be used to maintain patency of urethra.

18th.—Temperature, 100°.

20th.—Considerable hæmorrhage at 11·43 P. M., and chills. Penis irrigated and strapped to abdomen. Whisky and quinine administered.

22d.—Sounds Nos. 33 and 34 passed, followed by hæmorrhage.

26th.—Passed sounds of same caliber as last.

28th.—Discharged.

The patient, who is exceptionally intelligent, gives further details—viz., that at the time of the operation there was a free urethral discharge of pus, of the existence of which he thinks the operator was unaware. Also that, on the third day after the operation, he had an erection during which something seemed to give way, and this sensation was immediately followed by profuse hæmorrhage. For three months after leaving the hospital there persisted a free discharge of pus; after this period it became less in quantity and muco-purulent in character.

Three weeks after the operation he first noticed the curvature, and states that it was as pronounced then as now. No pain has accompanied erection or ejaculation at any time. He has had one attack of pseudo-gonorrhœa since operation, but this yielded to treatment quickly, so far as the acuteness was concerned, and his condition resumed its former character.

From the history and *status præsens*, I think there can be no doubt of there having been an exudative inflammation of that portion of the corpus spongiosum that corresponds with the concavity of the incurvation, and to those who hold one of the two theories regarding the pathology of ordinary chordee the title of this paper will not appear inappropriate.

The history of this case shows conclusively, I think, that more than stricture tissue was incised during the operation, and that the sheath of the corpus spongiosum was nicked or cut through, leaving the erectile tissue unprotected, or even slightly wounded. The state of things, then, being favorable to tearing of the spongy body, it promptly took place during the distention accompanying the first erection, and perhaps further damage followed the introduction of sounds two days later.

The statement of the patient, to the effect that at the acme of the erection he felt something give way in the passage and that hæmorrhage immediately followed, is corroborative of this.

This tearing of the erectile tissue originated an inflammation that was aggravated, probably, by the presence of the urethral discharge, and the inflammatory process went on till obliteration of the meshes of the affected portion of the corpus spongiosum took place.

It may not be out of the way to say here that free hæmorrhage and other complications of internal urethrotomy seldom or never occur when stricture tissue alone is incised; but the reverse holds good when the healthy mucous membrane and deeper structures are wounded—events not at all unlikely to occur in the use of instruments the knives of which are not directly under the control of the operator.

Treatment.—This has been in some measure a success. The granular condition of the urethra cleared up under the topical applications of silver-nitrate solutions of increasing strengths.

The use of full-sized sounds, together with deep injections of glycerine of tannin, has lessened the frequency of emissions. The incurvation has slightly but appreciably decreased under massage, inunctions of protiodide of mercury and atropine, and the use of electrolysis.

Massage of the whole body, cold spinal douches, and the internal administration of phosphorus and nux vomica about complete the course of treatment followed.

406 WARREN STREET.

THE PRACTICAL WORKINGS OF THE NEW LAWS FOR THE STATE CARE OF THE INSANE.*

BY CARLOS F. MACDONALD, M. D.,

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PROFESSOR OF MENTAL DISEASES IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE;
LATE LECTURER ON INSANITY IN THE ALBANY MEDICAL COLLEGE.

THE fact that the Medical Society of the State of New York is in large measure entitled to credit for the original impulse and the early effort which resulted in two greatly advanced steps taken by the State in dealing with its dependent insane, first in 1836 and again in 1865, and also that it actively participated in the final movement which culminated in the passage in 1890 of the so-called State Care Act—steps which may not inaptly be termed epochs in the progressive development of this most important subject of the State's relations to those of its citizens, who, afflicted by insanity, are thereby reduced to dependence on the State's charity for their subsistence—would seem to be sufficient in itself to warrant the writer, who is the medical member of the only official body of the State charged with the administration of the laws relating to the insane and the general supervision and oversight of the hospitals, asylums, homes, and retreats, both public and private, established for the care and treatment of this unfortunate class, in presenting to the society an outline of what that administration has done and is doing, and of the general condition of the insane in the State at the present time as contrasted with the state of things which formerly prevailed in relation thereto.

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* Read before the Medical Society of the State of New York at its eighty-eighth annual meeting.

Furthermore, in view of the great frequency and widespread prevalence of insanity throughout the civilized nations of the globe, as compared with other diseases, many of which are properly regarded as of very great importance, and respecting whose nature, symptoms, and treatment we, as physicians, are required to be well informed; and in view of the fact that insanity involves a wider range of interests and is more far-reaching in its effects—whether as regards the individual sufferer, his family, or the community at large—than any other disease to which mankind is liable, the subject of the care and treatment of the insane is obviously one of great public importance; while to the medical profession, whose members must encounter cases of mental disease with more or less frequency from the very outset of their professional practice, it has a peculiar interest. Then, too, our lawmakers, in recognition of the fact that insanity is a disease, or, in other words, a medical question, have conferred exceptional powers upon our profession in the matter of making certificates in lunacy, whose effect is to deprive persons of their liberty, the deprivation of this constitutional right being in most cases of insanity a necessary incident to the patient's proper treatment and safe keeping as well as essential to the public safety. Such being the case, it is eminently proper that the medical profession, to whom alone is delegated this extraordinary power—at least so far as the initial legal step is concerned—should insist that those who are deprived of their liberty by reason of the action of its members are properly housed, fed, and clothed, and supplied with competent supervision and medical care and treatment. In a word, it is the duty of the medical profession to insist that the insane shall be amply provided with everything which medical science has declared to be essential to the restoration of those who are recoverable and to the proper care and comfort of those who do not recover.

Our interest, both as physicians and as public-spirited citizens, should especially be invoked in behalf of the dependent insane, in whose ranks are found representatives of all professions, trades, and occupations, and most of whom were self-supporting, respectable citizens before the onset of their disease, and who, though necessarily now maintained at public expense, are, with few exceptions, in no proper sense of the term, paupers—the term insane pauper being properly applied only to those who were paupers before they became insane. It should be borne in mind in connection with this subject that many self-supporting citizens are not possessed of any large amount of means over and above their immediate necessities, so that if the hard-working professional man, mechanic, farmer, teacher, or laborer falls a victim to insanity, he must necessarily, sooner or later, become a dependent upon the public bounty, even though he may have been a taxpayer before the onset of his disease.

In support of the claim here indicated respecting the importance of insanity as compared with other diseases, the writer would recall the trite facts that the symptom group which we denominate insanity is in every case but the outward expression, on the mental side, of existing disease or disturbance of the brain, the organ through which the operations of the mind are made manifest to us—the term mind being here used in a physiological sense, and implying the sum total of those brain functions which are known as thought, feeling, and will; that insanity is a disease which invades all classes and from which no one, be he rich or poor, high or low, can claim exemption; that it involves to its victim, to his immediate friends, and to the community a wider range of interests than any other disease. To the individual it involves a loss or perversion of that faculty which alone distinguishes man from the lower animals; it also involves usually the loss of the liberty guaranteed to every individual by the Constitution; it involves the loss of control of his property and affairs, a disturbance or destruction of his social and business relations, enforced separation from his family, and, if his disease happens to take an unhappy form, it involves great mental anguish and suffering, and possibly the loss of his life through self-destruction or exhaustion; or, if the case fail of recovery, it involves a prolonged and often weary existence, which might properly be termed "a living death." To the individual's family it usually involves great anxiety and distress, occasioned by the sad spectacle of a loved one with reason dethroned, and the putting of this loved one away in the care of strangers; it involves the stigma which society unfortunately and unjustly attaches to the taint of insanity, and which is usually regarded by the relatives of the sufferer as something akin to shame and distress. It frequently involves a cutting off of the source of income, especially if the afflicted one be the breadwinner of the family; also the added expense of commitment to and maintenance in a hospital for the insane; and finally, it involves exposure of the lives and property of the family to danger from violent and destructive tendencies of the patient. To the community it involves great danger to life and property from the acts of homicidal and dangerous lunatics; also a large loss to the body politic by the withdrawal from the ranks of wage-earners of the earning capacity of many thousands of individuals—substantially all of the insane being adults and for the most part in the active stage of life; and last, though by no means least, it devolves upon the community an enormous burden of taxation incident to providing for and maintaining hospitals and asylums for the custody and care of a vast army of insane people, there being to-day in the public and private hospitals and asylums, homes and retreats in the State of New York alone upward of eighteen thousand insane persons held under certificates of lunacy, not to mention the large number of unapprehended, unrecognized, and so-called "border-land" cases, which are liable at any time to call for medical attention and advice.

The number of committed insane in the State of New York on the first day of January, 1894, was: In State hospitals, exclusive of the Hospital for Insane Criminals, 8,901; in the so-called exempted county system, embracing the asylums of New York city and Kings County, 8,423; and in licensed private asylums, homes, and retreats, 830—making a total of 18,154. Of this number, 8,500 were men and 9,654 women. The aggregate cost of lands, buildings, equipment, and furniture devoted to their uses on October 1, 1893, was, in round numbers: For the State hospitals, $11,000,000; for the asylums of New York and Kings Counties, $4,600,000; and for the licensed private institutions, $1,110,000—making a total cost for this purpose of $16,710,000. The cost of maintenance of the insane for the fiscal year ending September 30, 1893, was, in round numbers: State hospitals, $1,837,000; asylums of New York and Kings Counties, $1,254,000; licensed private asylums, $480,000—making a total annual cost for maintenance, in round numbers, of $3,376,000. The institutions in the State, not including the Hospital for insane Criminals, are: State hospitals, 8; county asylums of New York and Kings, 6; licensed private institutions, 17; or 31 in all.

The foregoing statement of facts and figures is here presented merely for the purpose of calling attention by way of introduction to the magnitude and importance of the disease under consideration, and as suggestive of the wide range of interests it involves, whether viewed from a professional, sociological, or economical standpoint.

The first attempt on the part of the State of New York to provide State care for the insane was made nearly sixty years ago, when, in 1836, the Legislature, in response to a memorial from this society, praying for the establishment of a suitable State asylum for the insane, created the State Lunatic Asylum at Utica, now the Utica State Hospital. Prior to that time the insane poor, both acute and chronic, were mostly cared for in county or town poorhouses, there being substantially no other provision for them. Provision was made in the original charter of the Utica Asylum whereby patients who failed to recover after a certain period of time or who should be pronounced incurable, might be removed to the county poorhouse, upon the superintendent's certificate that the patient was "incurable" or "not likely to be benefited by further treatment, and could probably be made comfortable in the poorhouse." This was a most inhumane and barbarous provision, and one that was continued in operation under certain modifications, though with practically the same results, until the creation of the State Commission in Lunacy in 1889, and the subsequent passage of the State Care Act in 1890; so that while the establishment of the State Lunatic Asylum in Utica in 1836* was a practical recognition on the part of the State of the principle of State care, its beneficence extended only to State care for *the acute or recent insane*, while at the same time it countenanced, or at least tolerated, a system of county or poorhouse care in its worst form by permitting the superintendent of the asylum, in his discretion, to transfer to county houses under the guise of incurability the friendless, the violent and destructive, the filthy and infirm, and the feeble and helpless—the very classes which of all others most need the fostering care and protection of the State. This pernicious system continued for a period of nearly thirty years, during which time the poorhouses became filled to overflowing with mentally afflicted human beings, who were restricted to the merest pretense of custodial care and maintained in a spirit of parsimony whose chief apparent ambition was to see on how small a pittance body and soul could be kept together. The keeper of one county poorhouse publicly proclaimed in 1889 that he maintained the insane of his county at a cost of ninety cents a head per week, including food, clothing, bedding, warmth, lights, and medical attendance.

Subsequently, in 1865, again through the active agency of this society, which, through its secretary, the late Sylvester D. Willard, investigated and reported upon the condition of the insane in the various poorhouses of the State, the Legislature passed the "Willard Asylum Act," which provided for the establishment of a State asylum for the chronic insane. This act, which has been aptly characterized as the "second era of the lunacy legislation of the State—that of *State care of the chronic insane*," contemplated the removal of all the chronic insane from the county houses to the Willard Asylum, and aimed to prohibit the counties, except New York, Kings, and Monroe, from thereafter caring for their chronic insane. So that, with the establishment of the Utica Asylum for the acute insane and the Willard Asylum for the chronic insane, the State had, theoretically at least, adopted the policy of caring for all its dependent insane. But through delay in establishing and extending the Willard institution, and despite the subsequent opening of the Hudson River State Hospital and the Homœopathic Hospital in 1871, the Buffalo Asylum in 1880, and the Binghamton Asylum for the chronic insane in 1881, the supply of accommodations for the State's insane was still inadequate to the demand. This lack of accommodations in the State asylums was made the basis of an appeal to the Legislature by county authorities and others to permit the counties to again care for their chronic insane. In response to this appeal the Legislature granted exemption to several counties by special act, and also in 1871 authorized the State Board of Charities, in its discretion, to grant licenses to counties to care for their chronic insane under certain conditions, and to exempt such counties from the Willard Act, and also to revoke said licenses in case of failure to comply with the terms and conditions imposed. Under the provisions of this scheme for a return to the wretched county system, the State Board of Charities, a majority of whose members were adherents and advocates of separate provision for the chronic insane in either State or county asylums, granted licenses to nineteen counties, in which were established so-called county asylums, located for the most part on the grounds of and adjacent to the poorhouses and under the same management, being, as a matter of fact, in most cases merely an integral part of the poorhouse, under the control of a lay keeper, and conducted on a similar basis as regards the standard of care.

One of the evils of this system, aside from the wretched surroundings and care to which it consigned the dependent insane, was that it pauperized substantially all who failed of recovery after a year's residence in a State asylum, and even those who were transferred from the "acute asylums" to the Willard and Binghamton Asylums as incurable were made unhappy by the lower standard of care and treatment which they received at the latter institutions, as well as by the implied fact that hope of recovery in their cases had been abandoned. Furthermore, it was found to be the practice of many of these exempted counties to receive into their so-called asylums acute cases directly from their homes, which was a clear violation of law. And yet, strange as it may now appear, the licenses granted to these counties by the State Board of Charities were permitted to stand in the face of the evils here referred to; and, moreover, and still more strange, the board which granted them indirectly encouraged and commended this system in some of its official reports.

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* Opened for the reception of patients in 1843.

The State Charities Aid Association, a voluntary organization, in its report on the insane for 1893, says: "Meanwhile, the humane thought of the day being thus earnestly engaged in trying to solve the difficult problem of how to obtain for the indigent insane the best treatment that an advanced civilization could give them, the pernicious legislation of 1871, already referred to, was slowly but surely sapping the vitality of the reform movement of 1865 in behalf of the chronic insane. County after county applied for and obtained exemption from the Willard Act. By October 1, 1887, nineteen counties had thus been authorized to keep their milder cases of insanity. It is true these exemptions were granted by the State Board of Charities under promise from the counties 'to give their insane just as good care as the State gave'—promises, alas! never kept. No longer, as of old, were the chronic insane to go from poorhouse to State hospital, but from State hospital to poorhouse. Gradually, year by year, and so slowly that we scarcely realized it, the poorhouse officials were tightening their grasp upon these poor people, until suddenly we were confronted by the alarming fact that the supervisors of one third of the counties were arrayed in favor of the poorhouse system."

This was the condition of affairs when, in 1889, the State Commission in Lunacy was created, to which body was transferred, among other things, the power hitherto possessed by the State Board of Charities in the matter of granting exemptions from the Willard Act. It is needless to say that the Commission in Lunacy promptly declined to grant any further exemptions to counties; and how the commission, after having made a tour of the county asylums of the State, exposed and denounced what it there discovered in its first annual report to the Legislature in 1889, is a matter of recent history in relation to the insane which is too well known to all who are interested in the welfare of this class to call for more than passing notice here.

The State Charities Aid Association, which for years had strenuously opposed the county care system, and had unsuccessfully striven for two successive years to induce the Legislature to pass its bill for State care of the insane, in the report above referred to says: "As one reads the first annual report of the Commission in Lunacy, written in 1890, glowing with indignation as it recounts the sufferings of these poor people, one is surprised to find how little progress had been made in all those years. The system of poorhouse care has proved itself radically defective. Thank God! this horrible system is now a thing of the past." And again in the same report: "Heretofore the State Commissioner in Lunacy had almost no power beyond that of inspection and report. He had neither office nor clerical assistance, and could accomplish but little. When, therefore, the Legislature of 1889 created a State Commission in Lunacy of three members, with greatly enlarged powers and duties, a much-needed reform had been effected. . . . The thorough inspection made by this commission of the asylums of the entire State, and their outspoken denunciation of the dreadful condition of the insane in the exempted county asylums, as submitted in their first report to the Legislature, may justly be regarded as the deathblow to the poorhouse system."

Following this first report of the Lunacy Commission to the Legislature, the State Charities Aid Association, under the able leadership of that stanch friend of the dependent insane, Miss Louisa Lee Schuyler, again brought forward its bill for State care, and this time succeeded in passing it, in spite of "organized, vigorous, and determined opposition emanating from supervisors and superintendents of the poor of exempted counties."

The essential features of the State Care Act may be briefly summarized as follows: The abolition of the unscientific and inhumane *legal* distinction between acute and chronic insanity; the division of the State by counties into hospital districts, and compelling the hospitals to receive and care for all the dependent insane, both acute and chronic, within their respective districts; requiring the Commission in Lunacy to cause the removal of the insane poor from the county houses to State hospitals as fast as accommodations could be provided therefor; providing for the erection of comparatively inexpensive buildings of sufficient capacity on the grounds of existing State hospitals, the cost of erection, equipment, and furnishing of said buildings not to exceed the sum of $550 per capita, upon plans to be approved by the State Commission in Lunacy; requiring all county superintendents of the poor, or town, county, or city authorities, before sending a patient to any asylum, to see that he is in a state of bodily cleanliness and is comfortably clad, in accordance with regulations to be prescribed by the president of the commission; requiring that, in the case of transfer of a female patient, she shall be accompanied by a female attendant, unless she be transferred by her husband, father, brother, or son, and that, after said patient or patients have been delivered to the managers or trustees of the State hospitals, the care and custody of the county authorities over said insane persons shall cease, the expense of such transfer to be paid by the State; after sufficient accommodations shall have been provided in State institutions for all the pauper and indigent insane of all the counties of the State, the expense of such care, maintenance, treatment, and clothing of indigent insane patients in State hospitals to be no longer a charge upon any county, after the 1st of October next ensuing, but the cost of the same shall be paid out of the funds provided by the State for the support of the insane; that, after the board created by the State Care Act for the purpose of districting the State shall have certified to the Secretary of State that sufficient accommodations have been provided in State institutions for the indigent insane, no insane person shall be permitted to remain under county care, and that all insane who are now or may hereafter become a public charge shall be transferred to a State hospital, without unnecessary delay, there to be regarded and known as the wards of the State and to be wholly supported by the State; requiring the State Commission in Lunacy, whenever it shall deem it necessary and expedient, by reason of overcrowding, or in order to prevent the same, to recommend in its annual report to the Legislature the erection of such additional buildings on the grounds of any or all State hospitals then existing as shall in the judgment of the commission provide sufficient accommodations for the immediate and prospective wants of the insane of the State, or, if said commission shall deem it more expedient, it shall recommend the establishment of another State hospital or hospitals in such part of the State as, in its judgment, will best meet the requirements of the dependent insane; requiring the State Commission in Lunacy to hereafter furnish the Comptroller, on or before the 15th of September in each year, an estimate as to the probable number of persons who will become inmates of the respective State hospitals during the year beginning on the 1st of October next ensuing, and the cost of the necessary buildings and equipment, if any, which will be required to carry out the provisions of this act; requiring the managers or trustees of each of the said hospitals, on or before the 15th of September in each year, to furnish to the Comptroller an estimate of the cost of maintaining the probable number of patients who will be inmates of the respective hospitals during the year beginning on the 1st of October next ensuing; on the basis of these estimates the Comptroller to report, in his next annual report to the Legislature, his estimate of the amount to be provided for by the State for the support of such insane patients, and for the erection and equipment of such buildings as may be recommended.

The counties of New York, Kings, and Monroe are exempted from the operations of the State Care Act, but provision is made that whenever these counties, or any one of them, shall desire to be included under the provisions of the act, application may be made in writing to the Governor by the local authorities to transfer their asylums to the State upon such terms and conditions as may be specified in their application, the Governor to transmit the application to the Board for the Establishment of State Insane Asylum Districts created by the act, whereupon said board shall examine into the condition of the buildings, lands, and appurtenances sought to be transferred with reference to their value, and to ascertain whether such property is suitable for the purpose of a State hospital for the insane, and, if so, whether the terms and conditions proposed are just and proper, and to report its findings and conclusions to the Governor, whereupon the Governor shall transmit to the Legislature the report of said board with such recommendations, if any, as he may deem proper for the conversion of such county asylum into a State hospital for the insane.*

The act, moreover, revoked all exemptions heretofore granted to counties to care for their insane and prohibits the granting of further exemptions; it also provides that no insane person now or hereafter under the care of any State hospital shall be returned to or committed to the care of any superintendent of the poor of any county or to any other town, county, or city authorities, and the said superintendents of the poor are forbidden to receive any such patient who may be returned or committed to them in violation of the act.

By the adoption of the State Care Act, as outlined above, the State not only emphatically reaffirmed its policy of State care, which began in 1836, and which was extended in 1865, but unequivocally committed itself to the extreme and logical limit of the principle, in fact as well as in theory, that the dependent insane are the wards of the State and that the interests and maintenance of the insane should be confided exclusively to the State; while the terms of the act render it easily workable and susceptible of unlimited extension to meet the increasing demands which may from time to time be made upon it.

Following the passage of the State Care Act, and supplemental thereto, the Legislature appropriated $454,850 for the erection of additional buildings upon the grounds of the existing State hospitals, which, together with the partial completion of the St. Lawrence State Hospital, at Ogdensburg, were sufficient to provide accommodations for all of the insane then in the custody of the counties as well as for recent cases.

The erection of these buildings was rapidly accomplished within the per capita cost, $550, fixed by the act, and in 1893 the board was able to certify that sufficient accommodations within the purview of the statute had been provided, whereupon the Legislature, upon estimates furnished by the commission, passed an act known as Chapter 214 of the Laws of 1893, for the care, medical treatment, clothing, support, and transportation to State hospitals of the insane poor. This act provided for the levying of a tax of a third of a mill upon the taxable property of the State for the support of the State hospitals, the sum realized from this tax amounting, in round numbers, to $1,350,000, which, together with the estimated receipts of the State hospitals for the support of private patients and from other sources, brought the sum up to, in round numbers, $1,650,000. This act, which went into effect on October 1, 1893, provides for the submission to the Commission in Lunacy by the hospitals of itemized monthly estimates for their current expenses, these estimates to be revised by the commission as to quantity, quality, and price of supplies and wages, and subsequently to be certified to the Comptroller for payment of the amount of the estimates, as revised, to the respective treasurers of the State hospitals.

Having thus imperfectly outlined substantially all the legislation had for the insane, including the creation of the Commission in Lunacy in 1889—which in reality was the initial step in the final effort for the establishment of State care for the dependent insane—down to and including Chapter 214 of the Laws of 1893, which carried this humane and beneficent measure into full operation, it becomes pertinent to inquire as to what have thus far been the practical results of this legislation. In other words, what improvements, if any, have been made in the methods governing the commitment and general and medical care and treatment of the insane, and in the condition and management of the hospitals and asylums established and maintained for the benefit of this unfortunate class; also what, if any, advantages are derived to the taxpayers of the State as a result of the new method of supporting the dependent insane?

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* Under this provision the Monroe County Asylum was converted into the Rochester State Hospital in 1891.

(*To be continued.*)

NEURALGIA OF THE GREAT OCCIPITAL NERVE,

ASSOCIATED WITH SYMPTOMS OF A DESTRUCTIVE LESION OF THE CERVICAL SYMPATHETIC.*

By ALEXANDER B. JOHNSON, M. D.

THE following case seems to the writer worthy of recording on account of its comparative rarity, and because the exact locality of the lesion seems a little obscure:

The immediate effect of operation is also of some interest.

J. B. presented himself for treatment on November 1, 1893, on account of severe pain in the right side of the head, which made it impossible for him to work. The patient is sixty years old, married, a railroad conductor, and has always led a temperate life. He denies venereal disease. No alcoholic habit. Malaria thirty years ago. No distinct history of rheumatism. Physical examination shows a robust-looking man, a little senile, not anæmic. Heart and lungs apparently normal. Pulse 70, of moderate tension. No atheroma detected in external blood-vessels, but arcus senilis fairly marked in both corneæ. There are several old, white, depressed, irregular, and rounded scars, an inch or more in diameter, scattered over the chest and back. They do not appear to be adherent to the bones, and the patient can not describe them more nearly than to say that they were abscesses which he had many years ago and that they were a long time in healing.

Examination of the urine shows nothing abnormal beyond the fact that the quantity is large during twenty-four hours, with correspondingly low specific gravity. The trouble from which he now suffers began three years ago. At that time he was conductor on one of the railroads in the western part of the State, and had worked long hours with but little sleep for several weeks.

He fell asleep one night sitting by an open window of the moving train, his right side exposed to the draught of air which entered. He awoke chilled and feeling ill. His run finished, he made his way home with some difficulty and went to bed, where he remained for several weeks suffering from "a disease of the kidneys," and from his present symptoms, which are described by him as follows:

"He has severe pain of an aching character which occurs in paroxysms for the most part, and is referred to a point about two inches behind the lobule of the right ear and radiates upward and backward to the vertex. Sometimes he is free from pain for a few hours or a day, and again he suffers more or less constantly for weeks. There is marked tenderness on pressure over an area beginning about two inches behind the lobule of the right ear and spreading out fan-like posteriorly to the vertex. The patient further complains of inability to see well with the right eye, especially when objects are above him. He has pretty constant lacrymation from the right eye, and the right side of his face is flushed. The two last symptoms are more marked during the severer paroxysms of pain. He perspires more freely from the right side of the face. He complains of shortness of breath on exertion.

Objectively, the patient's face has an appearance which is characteristic. The upper eyelid on the right side droops so far as nearly to cover the pupil when the patient looks straight before him; the lower eyelid is also slightly elevated, so that the palpebral fissure is symmetrically narrowed. The right pupil is contracted, smaller than the left, and does not react to light. The right eye is watery, and the entire right side of the face is redder than the left.

There is no paralysis of the face; but the skin and muscles appear less full and feel flabby in comparison with the opposite side.

The patient was examined by Dr. M. A. Starr, who located the lesion in the cervical sympathetic, and advised an exploratory operation, having for its object an examination of the superior cervical ganglion and of the cord above and below it, believing that the lesion being evidently a destructive one, a new growth capable of removal might be found which was causing the paralytic symptoms by pressure on the ganglion or cord.

The patient had undergone medical treatment of various kinds during the past three years without relief, and a seton had been introduced into the skin behind the ear with slight temporary benefit.

He was quite unable to continue his work, and felt ready to accept any form of treatment which might give him relief from his suffering. It was thought that an incision, exposing at the same time the posterior branches of the upper cervical nerves and the cervical sympathetic, might be made; but a trial upon the cadaver showed that such an incision would have to be quite extensive, and that so many structures would have to be divided that the operation would be a very severe one for an individual advanced in life; and it was decided that an exposure of the sympathetic would suffice in view of the doubtful benefit of the former procedure.

Operation, November 4, 1893. Incision three inches and a half in length along posterior border of right sterno-mastoid, beginning just below the mastoid process. The sterno-mastoid muscle was drawn forward and the internal jugular vein was drawn by means of a blunt hook in the same direction. The internal carotid artery was lifted and search was made for the superior cervical ganglion upon the surface of the rectus capitis anticus major muscle.

The ganglion was found, however, included within the sheath of the internal carotid, to which it appeared to be distinctly adherent.

The adhesions were divided and the ganglion was freed, as well as the cord below, to the extent of two inches.

No abnormity in appearance could be recognized either in the ganglion or cord, and the wound was closed, a small piece of rubber tissue having been inserted for drainage.

This was removed at the end of three days, and the wound was solidly healed at the end of eight days. There was no rise of temperature.

The neuralgic pains from which the patient had suffered disappeared at once after the operation; he had no tenderness of the scalp. The lacrymation and flushing of the face ceased. His pupil on the right side became a little larger and reacted slightly to light, and his right upper eyelid drooped so little that it was scarcely noticeable and did not at all interfere with vision.

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* Read before the New York Neurological Society, March 6, 1894.

He left the city at the end of a fortnight entirely free from any pain or discomfort.

This gratifying condition lasted, however, but a few weeks, and at the end of a month and a half all the symptoms had returned, and at the present writing the patient finds himself in no way improved.

Diagnosis.—The neuralgia from which the patient suffered was for the most part confined to the great occipital or posterior branch of the second cervical nerve; the area of distribution of the anterior branch or lesser occipital nerve in the skin immediately behind the ear was not tender, nor was it the seat of pain except to a slight degree occasionally.

The symptoms of lesions of the cervical sympathetic are thus described by Dr. M. A. Starr in his article on that subject in Pepper's *System of Medicine*, vol. v, page 1263, and following:

"The symptoms of irritation of the cervical sympathetic are dilatation of the pupil, widening of the palpebral fissure, protrusion of the eyeball, pallor of the entire side of the face and head, with slight fall of local temperature and possibly an increased secretion of perspiration, and an increased frequency of the heart.

"The symptoms of destructive disease of the cervical sympathetic are the converse of those just mentioned, and they are all present when the part is seriously involved.

"The patient will then have a marked contraction of the pupil which no longer responds to light, nor to irritation of the skin of the neck, but may change slightly in the act of accommodation. It resists the action of mydriatics. The vessels of the chorioid and retina may be dilated, as well as those of the iris, in which case the patient will feel a sense of weariness on any long-continued attempt to use the eyes. There is no actual disturbance of vision. There is a noticeable narrowing of the palpebral fissure, the upper lid falling slightly, as in a mild state of ptosis, and the lower lid being slightly elevated.

"This is due to the paralysis of the muscles of Müller in the eyelid, which are controlled by the sympathetic. A marked symptom, and one which is constant, is a dilatation of the vessels of the face, conjunctiva, nasal mucous membrane, ear, and scalp.

"An increased secretion of tears sometimes accompanies dilatation of the vessels of the skin of the head.

"A difference between the degree of moisture on the two sides of the face on exposure to heat is usually present.

"Palpitation of the heart has been an annoying symptom in many cases. This is usually associated with a marked slowing of the pulse.

"A slight atrophy of the affected side of the face has been observed in several cases, appearing after the disease had existed for some time. The muscles of the cheek feel flabby and are slightly sunken, but the condition does not approach in severity true facial hemiatrophy, nor is it sufficiently rapid to be considered due to atrophic disturbance."

From the symptoms of the patient whose history forms the subject of this paper, it can be seen that he presented in a fairly typical way the condition of paralysis or of a destructive lesion of the cervical sympathetic.

The only other disease with which this might be confounded is possibly paralysis of the third cranial nerve. A comparison of the essential symptoms of the two conditions placed in parallel columns renders the diagnosis sufficiently clear:

PARALYSIS OF THE THIRD NERVE.	PARALYSIS OF THE CERVICAL SYMPATHETIC.
Eyeball immovable except outward and a little downward and inward.	Movements of the eyeball unrestricted.
Slight external strabismus often present.	
Pupil at first of medium size, becoming gradually and permanently dilated.	Pupil contracted.
No reaction to light.	No reaction to light.
Accommodative reaction lost.	Accommodative reaction may be present.
Ptosis complete or partial.	Ptosis partial, never complete.
Lower lid unaffected.	Lower lid slightly elevated.
	Palpebral fissure symmetrically narrowed.
Vaso-motor symptoms absent.	Vaso-motor symptoms commonly marked.
No disturbance of heart action.	Flushing of the face and scalp; sweating.
	Pulse usually slow.
Breathing not disturbed.	Palpitation of the heart a common symptom.
	Dyspnœa on exertion a regular symptom.

As bearing directly upon the locality of the lesion in the case under consideration, some of the facts known in regard to the origin and course of the fibers of the cervical sympathetic are interesting; many of them, especially the vaso-motor fibers and those which being excited cause dilatation of the pupil of the eye, are derived from the spinal cord; this being shown by experiments on animals, and in certain cases where wounds of the spinal cord in the lower cervical region have caused crossed motor and sensory paralysis attended by symptoms of paralysis of the cervical sympathetic. A case of this kind is described by Brown-Séquard in the *Journal de physiologie*, vol. vi, January, 1863, in which both pupillary and vaso-motor symptoms were present in a marked degree.

The writer has seen a similar case within a few weeks, in one of the hospitals in this city, where after a fall an injury of the lower cervical and upper dorsal regions was followed by crossed motor and sensory palsy and by well-marked symptoms of paralysis of the cervical sympathetic. These facts show that symptoms of a destructive lesion of the sympathetic may be caused by some disturbance within the spinal cord. Also, in *A Text-book of Physiology*, by Michael Foster, sixth edition, part iv, pp. 40, 41, there occurs the following paragraph: "The pupil-dilating influence of the cervical sympathetic may, as in the case of a vaso-constrictor action of the same nerve, be traced backward down the neck to the upper thoracic ganglion, and thence to the spinal cord along the ramus communicans and anterior root of the second thoracic nerve, in the case of the dog, the monkey, and man." It will be remembered that in the case now under consideration the neuralgic symptoms were quite closely confined to the area of distribution of the posterior root of the second cervical nerve—namely, to the great occipital nerve, which therefore could have no direct anatomical connection with the cervical sympathetic fibers outside the spinal canal. Hence the writer thinks it fair to suppose that both sensory and sympathetic symptoms were due to a lesion situated in the spinal cord, small in extent and of a destructive character, the exact location of which it is at present impossible to determine; and, since the sympathetic symptoms were of a nature pointing to the disintegration of nervous material rather than to an irritative process, the writer further believes that such a symptom complex would furnish a contraindication to operative interference, except in cases where some new growth capable of removal was causing pressure upon both the spinal nerve and sympathetic in the neck. The writer is at a loss to explain the immediate temporary benefit of operation in this case, except on the ground that a powerful peripheral impression often has this effect even in organic disease where a slighter one would cause pain.

The writer desires to express his thanks to Dr. M. A. Starr and to Dr. E. C. Seguin for suggestions which have assisted him greatly in the preparation of this paper.

TOTAL ABLATION OF THE UTERUS FOR FIBROID TUMORS,

BY LIGATION, CUTTING, ENUCLEATION, AND VAGINAL DRAINAGE.

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Total ablation of the uterus by a method, the various stages of which make up the title of this brief article, is pressing its claims for recognition and favor.

The extraperitoneal treatment of the pedicle, supported in the abdominal incision, was a good method, and is probably the safest method for inexperienced operators even yet; but the time has arrived when this method will no longer be held in its former high esteem by many operators of experience and aseptic proclivities.

Surgical evolution is of slow growth. It has required an entire decade to pass from the operation as established by Péan and Kœberlé, cultivated by Keith, Hegar, and Bantock, and many others, to an operation which does away with the sloughing stump, the deep sinus, and the long convalescence of forty to forty-five days, to an operation comparatively free from the septic influence of decomposing tissue, the undelayed closure of the entire abdominal wound, and a convalescence varying from eighteen to twenty-eight days. Secondary to these advantages it has been a transition to a method involving much less expense to the patient or to the hospital which maintains her amid its many charities.

Distinct methods of operating have been given us by many of our own countrymen, able operators; among them I recall Krug, Goffe, Polk, Baer, Baldy, Hall, Byford, Martin, and Joseph Eastman. I have carefully studied these methods and have practiced all of them, excepting that of Byford and the more recent ligation *per vaginam* of Martin. The outcome of the practical research on my own part is that I have abandoned the extraperitoneal (abdominal) treatment of the pedicle. I can fully indorse the advance as advocated by Krug, Goffe, Polk, Baer, Hall, Baldy, and Eastman.

The Trendelenburg position, with the staff of Eastman, has made the operation with experienced surgeons safe and in most cases fairly easy.

The slight difference between total ablation and leaving a section of the cervix in the vaginal grasp, as advocated by Baer and Baldy, is not of great practical moment in operating; whether this section of cervix is left or not, the method of operating gets rid of the sloughing stump previously left in the grasp of the abdominal wound.

In operating, I sometimes leave the cervix below the internal os, or I take it out, as I think best at the time. But total ablation, without regard to any method of procedure and with the sole object in view of safely removing the entire uterus and its fibroids, has now become a frequent operation in my hands and is accomplished in the following surgical fashion:

The vagina is made aseptic after the suggestions of Krug; the patient is prepared for abdominal section with the most scrupulous detail known to all operators. For several days prior to operation she is given strychnine and quinine, and the time preferred for operation is a day or two before her expected menstruation—I like to take the patient at her best. She is given chloroform or the A. C. E. mixture, never ether, which alone is to my taste objectionable. I prefer chloroform, but I must know the man who administers it; given properly, it is the most satisfactory of all anæsthetics; I have used it in the presence of organic cardiac affections in my operations and no one has been injured by it. The anæsthetic is always preceded by a hypodermic of an eighth of a grain of morphine and a hundred and twentieth of a grain of atropine, and followed at the close of the operation very frequently by a fiftieth of a grain of trinitrin, even when the indication for it is wanting. Chloroform depression occasionally comes on after the patient has been put to bed; the trinitrin is a safeguard.

The abdomen is opened in the median line a distance of four inches, unless the patient is very fat, when all the space from the umbilicus downward is utilized at the start. The mass (uterus and tumor) is now explored with the fingers and hand, if necessary the incision is extended, and the mass is brought through the incision by means of pressure from the loins by the assistant and direct pulling on my part with a screw or forceps or transfixing pin thrust through the mass like a skewer in a roast of beef; the mass is held well toward the pubis by the assistant, while I pack a half dozen flat sponges in between its base and the intestines. The end of the table (Edebohls's) is now raised still higher, and the abdominal contents descend more completely toward the diaphragm; adhesions of omentum or intestines have already been separated, if they existed. Down the sides of the mass lie the hypertrophied broad ligaments and the hypertrophied Falloppian tubes and ovaries, usually abnormal. Well down below the ovaries and tubes a curved needle (Goodell's), perfectly round, is passed so as to embrace the fold of broad ligament from its outer edge to the wall of the mass. The ligature carried by the needle is of very heavy silk which has been boiled for three hours in plain water, and is tied under the greatest possible strain which it will bear. Above it a short distance a pair of lock-handled, large compression forceps are placed, embracing the ligament up to the mass. The ligament is now divided below the forceps. The opposite side is treated in the same manner. The mass now becomes more movable, freer from its moorings. At this stage of the operation an incision through the anterior peritoneal covering of the uterus may be made above the bladder, and a corresponding incision may be made on the posterior surface on the same plane. The peritoneal layer, front and back, may be stripped down to the vaginal attachment, at which point the uterus may be amputated, and the operation may be concluded as advised by Dr. Baer and Dr. Baldy. But to go on to total ablation: With the fingers feel for the uterine artery low down on the left side and try to carry a second ligature beneath it, keeping close to the wall of the uterus. This ligature, firmly tied, should be left long. The same procedure is gone through with on the opposite side. An incision, front and rear, is made as noted above, and the enucleation of the cervix is carried on, front and rear, to the vaginal attachment. On the sides the scissors complete the freeing process to the vaginal attachment also. During this last manœuvre the uterine arteries, if missed by the second ligature, will spout freely, and are caught up by the hæmostatic forceps and ligated. Eastman's staff is now pushed to the vault of the vagina, and on it the last cutting which liberates the cervix is done; any spurting vessels are ligated. The long ends of the ligature are now carried with the forceps through the vagina, to be left protruding at the vulva. The abdominal side of the open end of the vagina is closed with catgut, silkworm-gut interrupted suture, or fine silk. The peritoneal retracted flaps are turned with their raw surfaces toward the vagina, and the sutures, closing the wound, embrace the edges of the vaginal ring and pass through both layers of the peritonæum. Any gaps in the broad ligament are closed with catgut running suture. The sponges are now removed; they are loaded with blood which has escaped from the mass, not from the general circulation. The peritoneal cavity is left clean. Not one bleeding point is allowed to escape observation and treatment. The abdominal wound is closed with through-and-through silkworm-gut sutures, three to the inch, if the patient is lean; but when layers of fat fully two to two inches and a half lie under the skin I do not attempt this method, but the following: The peritonæum is closed with a running catgut suture. The aponeurosis and recti muscles are approximated with interrupted sutures, three to the inch, of carefully sterilized silkworm gut. The remaining tissues are approximated with heavy silk sutures, two to the inch, a *silkworm-gut drain* having first been laid along the entire length of the wound at the bottom of the fatty layer (Edebohls). The abdominal surface is now carefully sterilized with creolin solution. The wound is covered with aristol or iodoform; a gauze and cotton dressing, sterilized, and bandage complete the abdominal dressing. The patient is now lowered, her knees are brought up and in the lithotomy position, the vagina is washed out with sterilized hot water and lightly filled with iodoform gauze. *So thus by ligation, cutting, enucleation, and vaginal drainage* the operation is completed. There is practically no shock after the operation, and the highest temperature I have seen in the process of recovery was 100·4° F. The shortest period of convalescence has been fourteen days' confinement to bed. The longest has been twenty-one days—in a fat subject. In my first case I wounded the bladder, and the patient was here for two months after the operation before the bladder wound entirely healed; but barring this accident, which must be rare, the period of convalescence is about equal to that after ovariotomy.

In my last seventeen operations for the removal of fibroid tumors of the uterus, in every one of which I have removed the entire uterus or the uterus above the vaginal attachment, I have had sixteen recoveries and one death. Of these seventeen operations, eleven were done by Hegar's method, with one death. Of the remaining six, four were total ablations, as above described; all the patients recovered. One was after Baer's or Baldy's method; this patient also recovered. In one case I dropped the pedicle on something after Schröder's plan, and the patient recovered. These seventeen consecutive operations by four different methods have given a mortality of one, or less than six per cent.

ANTISEPTICS

IN SURGERY, GYNÆCOLOGY, AND MEDICINE.*

By EDWIN R. MAXSON, M. D., A. M., LL. D.,
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Since Professor Joseph Lister, now Sir Joseph, demonstrated in the Royal Infirmary of Glasgow the beneficial effects of antiseptics in surgery, which I witnessed in 1867, there has been ample confirmation of their efficacy.

It was my report to an American journal, first submitted to him, that brought an early if not the first account of his observations to this country. And carbolic acid, one part, to five of boiled linseed oil, usually made into a paste or putty with whiting (*a carbonate of calcium*), was applied to suppurating, granulating, local diseased conditions, wounds, etc., as is well known.

This, of course, kept the air in the surgical wards charged with carbolic acid, and to an appreciable extent in the contiguous medical wards, alleviating, as it appeared to us, their non-surgical diseases also.

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* Read before the Syracuse Academy of Medicine, March 6, 1894.

Since that time progressive surgeons the world over have quite generally resorted to antiseptics in some form in all septic surgical diseases, constituting the greatest advancement that has been made in surgery since it became a science, undoubtedly. And now, with the multitude of antiseptics at hand for internal and external use, the alleviation and cutting short of surgical disease are beyond computation, as our best practical surgeons can not fail to see in the healing of contused wounds, compound fractures, prevention of suppuration in thoracic, abdominal, and other perforations, operations on large joints, gunshot wounds, and a multitude of operations and conditions too numerous to mention here. Not only is the alleviation they afford of infinite value, but the cutting short of surgical diseased conditions is of still greater utility when the disease is even of a local character for which they are used.

Great, however, as the local use of antiseptics in surgery may be, their internal administration in preventing and curing blood-poisoning is also beyond all human computation, not only saving life, but also hastening the cure of the local disease at the same time. Hence the progressive, humane surgeon is no longer groping in forlorn darkness as to what should be done in all putrid surgical disease, local and general, as he did to a great extent before the introduction of antiseptic surgery. And it is a credit to surgeons that, though doubting at first, they have generally yielded to the dictates of common sense, and like "good Samaritans" are now preventing general sepsis by local antiseptics and curing general sepsis by administering general antiseptics, and thus aiding to cure local sepsis as well. Though by a proper selection and application locally, or by internal administration or both, as may be indicated, the good surgeon does not omit such other means as may be indicated to cure the disease; he feels, however, an assurance that whatever poison may have caused, or may be aggravating the disease, will be rendered inoperative, and he has only to resort to such other means as may be indicated to give the patient the greatest possible chance of a cure in the shortest possible time; and in just so far as they prevent and destroy the cause of septic conditions, local and general, is antiseptic surgery an advance in or improvement of the former treatment of surgical diseased conditions.

In Gynæcology.—The same holds true in the surgical department of gynæcology, and perhaps to even a greater extent than in general surgery, in cases too numerous to mention here. And the gynæcologist who heeds the indications afforded by such cases is sure to have the approval of an enlightened conscience and also the gratitude of the better half of our divine humanity. Antiseptic gynæcology then should be religiously adhered to, both local and general, to give the least possible suffering and danger for the shortest possible time to mothers, wives, sisters, daughters, and maids, in a great degree subject to the chances of life and death, through wise, conscientious, and judicious antiseptic treatment of the diseases peculiar to them.

I need not specify here the cases in which, abstaining from unnecessary operations, always a matter of delicacy, especially to them; with antiseptic helps, local and general, the duration of treatment may be thus cut short to the least possible time, and the number of them rendered as few as may be consistent with life and health. And the judicious gynæcologist will never neglect such other measures as may aid in this very desirable result, I am sure.

In Medicine.—In general medical practice, including all septic and contagious diseased conditions, antiseptics are as efficacious in aborting, cutting short, and rendering milder the disease, as in surgical cases. Why not?

This has become too well established by leading physicians in this and other countries to be gainsaid, and in the near future intelligent common sense, progressive medical treatment will recognize and prompt to the use of antiseptics in septic and contagious diseases of every character as much as in surgical cases undoubtedly, with such other measures as may be indicated. But it takes time to bring about a radical change of such a character, involving the relinquishment of traditions in relation to what has been regarded as self-limited disease.

It has not formerly been duly realized that it is the poison or septic cause of contagious diseases that requires a limited time for the system to eliminate or throw off the offending cause, and hence it was supposed that some contagious diseases were self-limited in duration, and could not be aborted, or even cut short, by any treatment whatever. But observation and the exercise of common sense, with enlightened reason, have clearly demonstrated to those willing and able to break away from the fogyish fossils of the past that by early destroying the poisonous, septic, or contagious principle the system has little or nothing to eliminate; and hence, if the disease is not aborted in every case, it is cut short and rendered much lighter. This has been the testimony of many of our most substantial physicians in Europe and the United States during the past few years, and more are coming to know it by the best possible evidence—experience.

Having carefully watched this matter from its inception, first with Sir Joseph Lister, in the Royal Infirmary of Glasgow, as before stated, and since in a great variety and number of appropriate cases, I am prepared to emphatically add my testimony in favor of antiseptic treatment in septic and all contagious diseases that have fallen under my observation in an extensive general practice since 1867; by no means ignoring or neglecting such other measures as may be indicated in any case. But, in my experience, antiseptics very early, with warm drinks, warm foot baths, sinapisms, if needed, a mild alterative laxative, as an improved cathartic pill, as may be required, suitable nourishment, and a tonic, as cinchonidine, in two-grain (thirteen centigrammes) doses every six hours, alternating with the antiseptic, say two grains (thirteen centigrammes) of sulphocarbolate of sodium for adults, less for children, may very generally abort septic and such contagious diseases as have fallen under my observation. But in such cases, when neglected early, my observation has been that, though not aborted, they are materially cut short and rendered lighter by such antiseptic and tonic treatment; complications, of course, being liable to occur, calling for wet or dry cups, blisters, etc., as the complications may indicate.

This applies to all non-contagious septic diseases, including typhoid pneumonia, puerperal fever, erysipelas, dysentery, diarrhœa, rheumatism, influenza (*la grippe*), and a multitude of others. And among contagious diseases I will only refer to varicella, parotiditis, diphtheria, rubeola, scarlatina, and enteric or typhoid fever, in all of which I have found so many cases, either aborted entirely or so far cut short and rendered milder, that I have entirely abandoned the fossil idea that there are any self-limited diseases among them, or, in fact, any others, provided a suitable antiseptic is selected and judiciously administered, early, with such other treatment as may be indicated as before described. And, while I have not treated small-pox to test antiseptics in that disease, Dr. Samayoa, of Guatemala, in *Escuela de Medicina*, recently reported like results in aborting, cutting short, and rendering lighter small-pox by hydrochloride of cocaine, a strong antiseptic. He states, after using this alkaloid in several cases of small-pox, his results were as follows:

"Cocaine, given continuously from the beginning, can completely abort the disease.

"If given after the eruption has appeared, it will transform confluent or hæmorrhagic into discrete forms.

"Sometimes when cocaine is given from the beginning of the disease the eruption assumes a corneal aspect and the pustules fall very soon.

"Cocaine prevents suppuration; hence there is no secondary fever, and no marks remaining on the skin.

"To obtain these results it is necessary to give the cocaine as soon as the initial symptoms appear, *and it must be continued without interruption.*

"The best preparation is the hydrochlorate, and should be continued five days, or even nine if necessary."—*La Escuela de Medicina.*" *

This is high authority and corresponds with my observations in the treatment of contagious diseases.

To accomplish this, however, in the diseases I have treated antiseptically, warm, plain, suitable food and hot drinks, as toast-water with milk, and at meal hours the same or weak tea and toast, should only be allowed, and no trash at any time, such as oranges, lemonade, or other drink than I have mentioned, and only gradually other food. And in enteric or typhoid fever, and in other diseases in which the alimentary, bronchial, or other internal mucous membranes or structures are primarily or become secondarily involved, sinapisms early, and, if not subdued, cups or even blisters may be required. The antiseptic should be continued till all the spores have germinated and been destroyed—one week at least after all symptoms of the disease disappear. For I am convinced that no safe antiseptic will destroy the spores before they germinate.

Among the antiseptics for internal use I oftener give the sulphocarbolate of sodium, as it is soluble, tasteless, and efficient; two-grain (thirteen-centigramme) doses for adults, less for children, in proportion to the age, in any ordinary septic or contagious disease, given every six hours, may be sufficient, as a rule. Locally, boroglyceride and ichthyol are favorites with me. I never use quack nostrums, antiseptic or other. In addition to the antiseptic, non-toxic to the patient, when a tonic is indicated, such as are also antiseptic should be preferred, and the use of antiseptics should never be to the exclusion of other measures indicated.

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* Copied from the *Medical Brief* of February, 1894, p. 238.

SYMMETRICAL CONGENITAL DEFECTS IN THE ANTERIOR PILLARS OF THE FAUCES.*

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It is desired here to put on record this somewhat rare malformation, noted by Dr. George W. Major.

J. C., aged twenty-five years, of the fire police, subject of laryngeal phthisis. Referred by Dr. William A. Molson for local treatment on December 8, 1890. (No. 2,048 in Register of Department of Diseases of Nose and Throat, Montreal General Hospital.)

On examination, the anterior pillars of the fauces present two longitudinal slits or fissures, the left being slightly the larger, and measuring half an inch in length by about three sixteenths of an inch in width at the widest part.

These openings are of a somewhat oval form, extending down to the sides of the base of the tongue.

As the tonsils are deficient, the condition is very easy of observation. There are no evidences of cicatricial tissue anywhere, the edges of the openings being smooth, and presenting the natural appearances of the surrounding parts.

These cases are interesting as curiosities, and a knowledge of them is important in diagnosticating from other affections. Max Toeplitz, of New York, reports a case in the *Archives of Otology* for January, 1892, and states that the literature of the subject contains six similar observations up to that date.

The cases so far recorded have been by Wolters in 1859 (*Zeitschrift f. rat. Medic.*, dritte Reihe, Bd. vii, p. 156).

J. Solis-Cohen, in the *Medical Record* (July 20, 1878, p. 45), and in the second edition of his work on *Diseases of the Throat* (p. 206). This writer maintains that a separate investment of the fibers of the palato-glossus muscle is the cause of the condition.

Lefferts reports a case in the Philadelphia *Medical News* (January 7, 1882), besides communicating privately with Toeplitz regarding two unpublished cases in 1890.

Chiari, a case in 1884 (*Monatschr. f. Ohrenheilk.*, Jahrg. xviii, 1884, No. 8, Aug., p. 140).

Schapringer, a case in the same year (*Monatschr. f. Ohrenheilk.*, No. 11).

Besides these cases of symmetrical defects, observations have also been made upon unilateral malformations of the anterior pillars by Schapringer, Claiborne (*American Journal of the Medical Sciences*, April, 1885, p. 495), and Toeplitz (*Archiv. of Otol.*, January, 1892, p. 89).

139 Metcalfe Street.

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* Read before the Medico-chirurgical Society of Montreal, March 9, 1894.

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CONGENITAL HEART DISEASE IN CHILDREN.

In the *Journal de clinique et de thèrapeutique infantiles* for April 12th there is an article on the diagnosis of congenital affections of the heart in children, by Dr. G. Variot. The author divides these affections into two great groups, according as they are accompanied by cyanosis or not. Cyanosis, he says, is a symptom of such capital importance that on the strength of its existence alone we may make a positive diagnosis of malformation of the heart. The auscultatory signs which co-exist are inconstant and too untrustworthy, he says, to admit of the exact determination of the congenital lesion; therefore they should be considered secondary in cyanotic children. On the other hand, in congenital affections of the heart without cyanosis, physical exploration of the heart by inspection, palpation, percussion, and above all auscultation is the leading resource, often indeed the only one on which we can base a substantial diagnosis. The functional troubles which may be taken into account as symptoms, as revealing indications, are so slight as to pass unperceived until we practice auscultation and discover a lesion previously as latent for the patient as for others.

When, he continues, without any acute or chronic disease of the respiratory passages and without signs of asphyxia, we find continuous cyanosis in a child, we may affirm at once that it is the subject of a congenital lesion of the heart. The existence of a congenital lesion with cyanosis unaccompanied by any abnormal murmur is not very exceptional. The absence of such a murmur has been distinctly noticed by Peacock, Goodhart, and various French physicians. The variability of the auscultatory signs in children affected with congenital cyanosis is such that these signs ought to be relegated to a secondary position, and indeed it is rarely practicable, according to the best observers, to make use of them when they exist for distinguishing various malformations. Given, then, a well-marked case of cyanosis, what is the most probable congenital lesion, proper reserve being understood? According to Peacock, whose anatomical and clinical writings on anomalies of the heart are generally accepted, congenital lesions present themselves in the following order of frequency and gravity: 1. Stenosis of the pulmonary artery. 2. Stenosis of the pulmonary artery and persistence of the foramen ovale. 3. Stenosis of the pulmonary artery and imperfect separation of the ventricles. 4. Atresia of the pulmonary artery. 5. The existence of only one ventricle with one or two auricles. The two last-named lesions are very exceptional and rarely allow of prolonged survival. Theoretically, they must always be taken into consideration, but, practically, they may be disregarded.

The first three lesions remain. Stenosis of the pulmonary artery is not habitually complicated with cyanosis. The persistence of Botal's foramen with stenosis of the pulmonary artery has frequently been encountered unaccompanied by cyanotic signs. But the intraventricular perforation with stenosis of the pulmonary artery is invariably accompanied by cyanosis. This latter lesion is supposed to exist in a large majority of cases of congenital cyanosis. It is not impossible for a persistence of Botal's foramen or an unclosed ductus arteriosus to be found at the same time, but these two last anomalies have no characteristic physical signs by which they may be revealed. Congenital lesions of the heart with cyanosis in children are ordinarily latent. It is by chance auscultation, if the expression may be allowed, says the author, that they are nearly always discovered. A systolic souffle, with a maximum intensity at the pulmonary orifice, is not, however, always pathognomonic of stenosis of the pulmonary artery. Goodhart observed the same physical signs in connection with dilatation of the pulmonary artery following a premature and prolonged atelectasis impeding the depletion of the right ventricle and consequently of the pulmonary artery. He reports a very exceptional anomaly of the aorta, consisting in stenosis situated below the subclavian artery. This stenosis, more or less marked, may be replaced by a complete obliteration of the aorta. If there is only stenosis, a systolic souffle can be ascertained, also, at the same time, dilatation of the branches of the subclavian artery, which serve to establish collateral circulation. Essential mitral stenosis is more frequently found in women, and, since Peacock's researches, it has commonly been classed among congenital affections of the heart.

ADAPTATION IN THERAPEUTICS.

Perhaps one of the most striking advantages that can accrue to a general practitioner by observing the methods of a specialist, or to a specialist by giving attention to the procedures of those engaged in other specialties than his own, is the guidance to adapting to his own work the devices which he sees fall into use with greater precision than he would be likely to attain if he contented himself with reading, reflection, and association exclusively with those of his own class. This is more particularly true of topical medication. The ophthalmologist is almost sure to show to a practitioner who follows his work some special application to the eye which the observer may turn to good account in the medication of other organs of the body. The same is true of the otologist, the rhinologist, the laryngologist, the dermatologist, the gynæcologist, and so on.

It is seldom that an opportunity to carry on this advantageous observation beyond one's own territory, this sort of *reconnaissance*, so to speak, is presented on so large a scale and with such capabilities of variation as when a number of special societies meet in the same town at one time, as is the case on the occasions when the Congress of American Physicians and Surgeons assembles. It is almost as much on this account as by reason of the attractive programme provided for the general sessions of the congress that we again urge upon our readers the advantage of attending the approaching sessions of that body and of its constituent organizations, to be held in Washington on the 29th, 30th, and 31st of this month and the 1st of June. To draw inspiration from these meetings it is not necessary that one should be a member of any of the societies that go to make up the congress; any practitioner may avail himself to the utmost of the opportunities that will be lavishly presented of bettering himself in therapeutic acquirements, to say nothing of improving himself in diagnosis and all the other accomplishments that go to make a successful physician or surgeon.

MINOR PARAGRAPHS.

GUAIACOL IN THE TREATMENT OF BLENNORRHAGIC EPIDIDYMITIS.

At a recent meeting of the *Société médicale des hôpitaux*, of Paris, a report of which we find in the *Union médicale* for April 10th, M. Balzer and M. Lacour stated that they had obtained excellent results in the treatment of blennorrhagic epididymitis with guaiacol. On the skin of the inguinal region, they said, pure guaiacol could be applied; on the scrotum it was better to employ an ointment of from two to five parts of guaiacol to thirty of vaseline. One of the first effects of the application of this ointment was a rather sharp burning, lasting for about ten minutes; then the patient felt a sensation of heat, and almost immediately the pain disappeared, at least for three or four hours, and sometimes it did not return. Ordinarily it was necessary to make two applications on the first day, but after the third day there was no longer any pain. The applications were then discontinued, for they did not seem to exert any very decided resolvent action upon the inflammatory infiltration of the epididymis. It was evident, the authors said, that guaiacol exerted a very clear and energetic effect upon the pain of the disease; moreover, it overcame certain of the general symptoms which were due to the pain, for example, sleeplessness. It gave rise to a slight erythema of the scrotum, followed by drying and exfoliation of the epidermis. The authors had treated twenty cases with guaiacol, and in all of them the results had been most favorable and very rapid.

THE DENISON INHALER.

We have been favored by the manufacturers, the Denver Surgical Instrument Company, with two samples of a most ingenious inhaler devised by Dr. Charles Denison, of Denver, and called by him the "air-pressure inhaler and exhaler." By a clever arrangement of passages of influx and efflux for the air breathed through it, which can be so adjusted in capacity as to restrict or facilitate the current in either one of them independently of the other, the air-pressure within the lungs can be controlled. In a little chamber through which the current of air passes one can place a small absorbent packet moistened with any liquid of which it is desired that the vapor should be inhaled. The apparatus is made of hard rubber. It is light and of a convenient size for carrying in the pocket.

THE COUNTY MEDICAL SOCIETY'S DETECTIVE WORK.

The Medical Society of the County of New York undertakes to assist in the enforcement of the laws governing medical practice by seeking out and prosecuting offenders. One of its agents has lately been represented before the public as having acted the part of a go-between for ill-informed midwives and the utterers of certain certificates purporting to license them to practice. The society has investigated the matter and, while it does not find that any illegal acts have been performed by its agent, it has concluded that his course has been ill advised and that it is well to dispense with his further services.

THE PHYSICAL EXAMINATION LAW.

Somewhat more than two months ago we chronicled a judicial order for the physical examination of a young woman who had brought suit against a railway company to obtain damages for bodily injury. We expressed our disapproval of the law under which the order was issued, and not altogether on sentimental grounds. The order was afterward reversed by a higher court, and now it is announced that the Court of Appeals has sustained the reversal.

THE DOMESTIC FOWL AS A SURGEON.

In a recent number of the *Lyon médical* there is a summary of an account, given in the *Mouvement médical* and afterward in abstract in *La Médecine moderne*, of a case in which a chicken was suffocating as the result of too great haste in attempting to swallow a piece of bread. The cock, grave and majestic, stalked up, threw a side glance into the throat of the distressed chicken, then placed himself face to face with her and plunged his beak into her mouth, whence he withdrew a large piece of bread. The success of the operation was testified to by the operator and the patient crowing and cackling in concert.

THE ABSORPTION OF IODINE BY THE UTERUS.

In the *Centralblatt für Gynäkologie* for April 14th there is a summary of an account, published in the *Revue médicale de la Suisse romande*, of a case in which toxic effects were observed within ten minutes after cauterization of the canal of the cervix uteri with tincture of iodine; also of the case of a woman who had goître, and, being unwilling to undergo the iodine treatment of the tumor, was treated by frequent applications of tincture of iodine to the cervical canal on account of some disease of that part. The goître soon began to grow smaller.

THE DEMAND FOR LOYALTY IN A PHYSICIAN.

A recent number of the *Progrès médical* contains an announcement to the effect that a town of six thousand inhabitants is in need of a physician. It is stated that the locality is very desirable, and that the physician must be young, capable, industrious, and a supporter of the Republic.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 1, 1894:

DISEASES.	Week ending Apr. 24.		Week ending May 1.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	4	4	6	0
Scarlet fever	130	14	147	11
Cerebro-spinal meningitis	1	1	0	0
Measles	300	16	239	14
Diphtheria	170	63	202	50
Small-pox	22	1	16	5

The Wisconsin State Medical Society held its forty-eighth annual meeting in Milwaukee on Wednesday, Thursday, and Friday of this week, under the presidency of Dr. B. C. Brett, of Green Bay. The programme included the following titles:

An Address in Surgery, by Dr. H. Reineking, of Sheboygan; Tubercular Affections of the Knee Joint, by Dr. W. Mackie and Dr. H. M. Brown, of Milwaukee; Injuries of the Cranium and Contents: Diagnosis by Dr. B. G. Gudden, of Oshkosh; Treatment by Dr. W. H. Earles, of Milwaukee; Medico-legal Aspects by Dr. J. A. Jackson, of Madison; Hernia—Anatomical Considerations, by Dr. F. W. Epley, of New Richmond; The Treatment of Reducible Hernia, by Dr. B. T. Phillips, of Menomonee, Mich.; The Treatment of Strangulated Hernia and its Radical Cure, by Dr. A. H. Levings, of Milwaukee; Splints, by Dr. G. D. Ladd, of Milwaukee; Varicose Veins and their Treatment, by Dr. J. R. Minahan, of Green Bay; The Local Treatment of Acute Follicular Amygdalitis, by Dr. A. B. Farnham, of Milwaukee; The Internal Treatment of Acute Follicular Amygdalitis, by Dr. W. H. Neilson, of Milwaukee; Removal of the Tonsils, by Dr. Joseph Szoldrski, of Milwaukee; The Ætiology, Pathology, and Symptomatology of Tonsillar Hypertrophy, by Dr. F. C. Rogers, of Milwaukee; Tumors of the Tonsils, by Dr. O. M. Waterman, of Milwaukee; The Pathology of Granular Conjunctivitis, by Dr. H. V. Würdemann, of Milwaukee; The Medical Treatment of Granular Conjunctivitis, by Dr. C. Zimmermann, of Milwaukee; The Surgical Treatment of Granular Conjunctivitis, by Dr. J. A. Bach, of Milwaukee; The Complications of Granular Conjunctivitis and their Treatment, by Dr. E. H. Neymann, of Milwaukee; Acromegalia, by Dr. E. L. Bullard, of Waukesha; Pyrexia, by Dr. W. H. Washburn, of Milwaukee; Antipyretics and their Modus Operandi, by Dr. T. H. Hay, of Milwaukee; The Present Status of the Treatment of Acute Febrile Diseases by means of Antipyretic Drugs, by Dr. H. B. Sears, of Beaver Dam; Hyperpyrexia and its Management, by Dr. G. M. Steele, of Oshkosh; The Ephemeral Pyrexiæ of Childhood, by Dr. H. B. Tanner, of Kaukauna; The Pathology of Uræmia, by Dr. B. J. Bill, of Genoa Junction; The Clinical Aspects of Uræmia, by Dr. E. H. Townsend, of New Lisbon; The Therapeutics of Uræmia, by Dr. C. H. Lemon, of Milwaukee; The Principles and Ruts of the Practice of Medicine, by Dr. J. R. Currens, of Two Rivers; Stomach Catarrh and Lavage Treatment, by Dr. A. F. Heising, of Menomonee; Waiting, by Dr. S. W. French, of Milwaukee; The Country Doctor in Obstetrics, by Dr. W. T. Sarles, of Sparta; Hystero-myomectomy, by Dr. A. J. Puls, of Milwaukee; Observations on Seventy Recently Performed Laparotomies, by Dr. F. B. Robinson, of Chicago; Complications in Abdominal Surgery, by Dr. A. J. Burgess, of Milwaukee; Perineal Repair, by Dr. P. O'Keef, of Oconto; Strophanthus, by Dr. D. Mereness, of Milwaukee; The Use of Heart and Respiratory Stimulants in Anæsthesia, by Dr. H. M. Fisk, of Wauwatosa; The Use of Heart Tonics and Stimulants in Acute Febrile Diseases, by Dr. C. M. Gould, of Superior; The Treatment of Malignant Diphtheria, by Dr. S. P. Deahofe, of Mineral Point; Belladonna, by Dr. S. B. Sperry, of Milwaukee; House Disinfection, by Dr. O. T. Hougen, of Grand Rapids; The Duty of the State toward the Inebriate, by Dr. R. M. Wigginton, of Waukesha; The Hygiene of Villages, by Dr. L. H. Pelton, of Waupaca; Heredity and the Wards of the State, by Dr. E. H. Townsend, of New Lisbon; Provision for the Insane awaiting Commitment, by Dr. M. J. White, of Wauwatosa; Functional Nervous Diseases, by Dr. I. M. Wiltrout, of Hudson; Some Remarks on Disinfection of Baggage and Merchandise in Relation to Cholera, by Dr. Walter Kemster, of Milwaukee; The Treatment of Epilepsy, by Dr. W. F. Wegge, of Winnebago; Report of Two Cases of Unusual Parasitic Intestinal Disease, by Dr. E. F. Woods, of Janesville; Croupous Pneumonia in Children, by Dr. J. Noer, of Stoughton; Catarrhal Pneumonia, by Dr. Julia P. Kelley, of Milwaukee; Cerebral Signs and Stimulations in Pneumonia, by Dr. J. R. Barnett, of Neenah; Gouty Deposits of the Testicle, by Dr. F. J. Tower, of Milwaukee; Infantile Cyanosis from Bismuth Poisoning, by Dr. A. S. Maxson, of Milton Junction; The Treatment of Opium Poisoning, by Dr. W. H. Hulburt, of Reedsburg; Ocular Affections in Syphilis of the Brain, with Report of Five Cases, by Dr. C. Zimmermann, of Milwaukee; Hæmophilia, with Report of Case, by Dr. H. A. Anderson, of Pine Bluff; The Importance of Surgical Treatment of Otitis Media Purulenta, by Dr. G. E. Seaman, of Milwaukee; A Few Remarks about Water, by Dr. A. J. Hodgson, of Palmyra; and the president's annual address.

The New York Post-graduate Medical School and Hospital.—The new building, on the corner of Second Avenue and East Twentieth Street, will be opened on Tuesday afternoon and evening, the 8th inst. The exercises will occupy the time from 2 to 6 and from 8 to 10 P. M.

The Medico-legal Society.—At the next meeting, on Wednesday evening, the 9th inst., Dr. H. W. Mitchell will read a paper on Medical Witnesses, and Mr. Clark Bell will read one on Railways and Railway Surgeons.

The Association of Military Surgeons of the United States.—The association's fourth annual meeting, held in Washington this week, had the advantage of very commendatory words from President Cleveland, who opened the meeting.

The Medical Department of the University of the City of New York held its fifty-third annual commencement on Tuesday evening, the 1st inst.

The Society of the Alumni of St. Luke's Hospital held its annual meeting on April 24th and elected the retiring officers to serve another year.

The late Dr. Albert C. Stanard.—At a recent meeting of the Harvard Medical Society the following preamble and resolutions were passed:

Whereas, Dr. Albert Cushman Stanard, an esteemed member of the Harvard Medical Society of New York, has in the infinite wisdom of God been called thus early to lay aside the duties of life, cut down in the vigor of early manhood, as the paths of usefulness and promises of prosperity were opening wide to him; therefore be it

Resolved, That in his untimely death we recognize the loss to the society of one of its most promising and worthy members and desire to pay to his memory a tribute of sincere respect.

Resolved, That we extend to his stricken sisters our heartfelt sympathy at the grief which has come upon them.

Resolved, That these resolutions be published in the *New York Medical Journal*.

John B. Walker.
[Signed.] William B. Coley.
John H. Huddleston.

The Middleton Goldsmith Lecture was delivered before the New York Pathological Society by Dr. William H. Welch, of the Johns Hopkins University, Baltimore, on Saturday evening, April 28th, on the subject of Mixed and Secondary Infections.

Changes of Address.—Dr. H. J. Boldt, to No. 54 West Fifty-first Street; Dr. Andrew F. Currier, to No. 138 Madison

Avenue; Dr. George T. Elliot, to No. 14 West Thirty-third Street; Dr. Ramon Guitéras, to No. 23 West Fifty-third Street; Dr. C. E. Lockwood, to No. 34 West Thirty-eighth Street; Dr. R. K. Macalester, to No. 23 West Fifty-third Street; Dr. Frederic E. Sondern, to No. 38 West Thirty-eighth Street.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 21 to April 28, 1894:*

Havard, Valery, Major and Surgeon, is relieved from duty at Fort D. A. Russell, Wyoming, and ordered to David's Island, New York, for duty at that depot, relieving Gibson, Joseph R., Major and Surgeon. Major Gibson, on being relieved by Major Havard, is ordered to Fort Snelling, Minnesota, for duty at that station, relieving Winne, Charles K., Major and Surgeon. Major Charles K. Winne, on being relieved by Major Gibson, is ordered to duty at Fort McHenry, Maryland, relieving Ewing, Charles B., Captain and Assistant Surgeon. Captain Ewing, on being relieved by Major Winne, will report for duty at Jefferson Barracks, Missouri.

Kneedler, William L., Captain and Assistant Surgeon, will, in addition to his present duties as post surgeon at Fort Mason, California, perform that of attending surgeon at San Francisco, Cal., until further orders.

Glennan, James D., Captain and Asistant Surgeon, is granted leave of absence for one month, to take effect on or about April 24, 1894.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Five Weeks ending April 21, 1894:*

Murray, R. D., Surgeon. To inspect quarantine stations of Florida. April 17, 1894.

Bailhache, P. H., Surgeon. To proceed to New London, Conn., as inspector. April 18, 1894.

Mead, F. W., Surgeon. To report to the chairman of the Committee on District of Columbia of the United States Senate for special duty. April 7, 1894.

Carmichael, D. A., Passed Assistant Surgeon. To report to the medical officer in command at San Francisco, Cal., for temporary duty. April 11, 1894. To proceed to Fort Townsend, Washington, and inspect Marine-Hospital Service and quarantine service. April 1, 1894.

Brooks, S. D., Passed Assistant Surgeon. To proceed to Chicago, Ill., for temporary duty. April 3, 1894.

Bratton, W. D., Passed Assistant Surgeon. To report at bureau. April 16, 1894. To proceed to Reedy Island Quarantine and await orders. April 20, 1894.

Vaughan, G. T., Passed Assistant Surgeon. Detailed as chairman of the board for physical examination of candidates for the Revenue Marine Service. March 19, 1894.

Cobb, J. O., Passed Assistant Surgeon. To proceed to Seattle and Tacoma, Wash., as inspector. April 12, 1894.

Wertenbaker, C. P., Passed Assistant Surgeon. Granted leave of absence for two months. April 3, 1894.

Brown, B. W., Assistant Surgeon. Granted leave of absence for six days. April 7, 1894.

Decker, C. E., Assistant Surgeon. Placed on "waiting orders." April 1, 1894.

Strayer, Edgar, Assistant Surgeon. To proceed to Vineyard Haven, Mass., for temporary duty. April 4, 1894.

Oakley, J. H., Assistant Surgeon. To proceed to San Francisco Quarantine Station for temporary duty. April 11, 1894.

Prochazka, Emil, Assistant Surgeon. To proceed to Cleveland, Ohio, for temporary duty. April 2, 1894.

Society Meetings for the Coming Week:

Monday, *May 7th:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society (private), New York; Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; Boston Medical Association (annual); St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society.

Tuesday, *May 8th:* National Association of Railway Surgeons (first day, Galveston); New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Kings County, N. Y., Medical Association; Medical Societies of the Counties of Albany (semi-annual), Greene (annual—Cairo), and Rensselaer, N. Y.; Newark, N. J., Medical Association; Trenton, N. J., Medical Association (private); Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Camden (annual—Camden), Morris (annual), and Sussex, N. J., County Medical Societies (annual); Northwestern Medical Society of Philadelphia; Baltimore Gynæcological and Obstetrical Society; Practitioners' Club, Richmond, Ky.; Norfolk, Mass., District Medical Society (election—Hyde Park); Franklin, Vt., Medical Association (annual).

Wednesday, *May 9th:* National Association of Railway Surgeons (second day); Metropolitan Medical Society (private), New York; New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society, New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society; Pittsfield, Mass., Medical Association (private); Franklin (annual—Greenfield), Hampshire (annual—Northampton), and Worcester (annual—Worcester), Mass., District Medical Societies.

Thursday, *May 10th:* National Association of Railway Surgeons (third day); New York Academy of Medicine (Section in Pædiatrics); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; South Boston, Mass., Medical Club (private); Medical Society of the County of Cayuga, N. Y.; Pathological Society of Philadelphia.

Friday, *May 11th:* National Association of Railway Surgeons (fourth day); Yorkville Medical Association (private), New York; Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.

Saturday, *May 12th:* Obstetrical Society of Boston (private).

Proceedings of Societies.

PHILADELPHIA ACADEMY OF SURGERY.

Meeting of April 2, 1894.

The Vice-President, Dr. John B. Roberts, in the Chair.

Freedom from Recurring Appendicitis after Evacuation of the Abscess and Retention of the Appendix.—Dr. James M. Barton read a paper with this title. He said that at the last meeting of the American Surgical Association he had reported nine recoveries from operations for appendicitis in which the appendix had not been removed. These had all been cases of ruptured appendix with circumscribed abscess, with no general peritonitis and no symptoms of obstruction.

The operation had consisted in opening the abdomen and using sterilized cheese-cloth to hold the movable intestines back and to protect the general peritoneal cavity while the abscess was opened and emptied. Drains were then introduced, some of the cheese-cloth was permitted to remain, and most of the wound was closed. No attempt was made to find or remove the appendix.

Before considering the eventual condition of the appendix in these cases he wished to report, briefly, five more cases in which he had operated in the same manner, in all of which the patients had recovered. Brief statements of the leading features of the cases were then made.

His object in bringing this subject up was to exhibit several of these patients and to read reports from most of the others to show that none whose histories he had been able to follow had been at all troubled by the retained appendix, and to learn if the experience of the fellows of the academy had been similar to his own.

It was becoming widely recognized that this method of operation was accompanied by a low rate of mortality. Richardson in this country, Tait in England, and Reclus and Schmidt on the Continent, as well as many others, contented themselves in these cases of local purulent peritonitis with protecting the peritoneal cavity and draining. Others, however, still considered that no operation was complete without removing the appendix. In the March number of the *Annals of Surgery*, Dr. Fowler advised, in these cases, the removal of as much of the appendix as could be removed without separating adhesions, but considered it necessary to remove the rest of the appendix at a second operation.

Of these fourteen cases, in eleven he had operated during the last two years. All on whom he had operated in this manner had recovered, and none, that he was aware of, had had any trouble with the retained appendix since.

As the mortality had been much greater when he had removed the appendix, he now rarely did so unless the appendix was unruptured, or, if it was ruptured, only when general peritonitis had occurred.

Of these eleven patients he had been able to follow the history of eight, several of whom were present for examination.

The three whom he had not been able to find were hospital patients; two of them had been brought to the hospital by physicians. If either of these had had a recurrence needing surgical aid he would probably have known of it.

Of the eight whose histories he had been able to follow, none had had the slightest symptom referable to the appendix since the operation. No tumor was to be felt, and there was no tenderness. Indeed, they all appeared to have been singularly free from diseases of all sorts since the operation.

From the uniformity with which full and complete recovery had occurred in the few cases that had come under his care, it looked as if the appendix was not very apt to give trouble if permitted to remain. Indeed, he thought it was quite likely, in cases such as he had been considering, that the opening from the appendix into the intestine was closed early in the attack—closed quite as firmly as any ligature would close it—and there was but little probability that fæcal matters would ever again be able to enter the appendix either to cause a fæcal fistula to follow the operation or to start another appendicitis in the future.

If it was not firmly closed, the pus would never have broken through the walls of the appendix, or, having broken through, the resulting abscess would not have increased in size, but would have emptied itself through the appendix into the bowel.

To further illustrate the strength of this obstruction at the base of the appendix he had observed in several cases where fæcal fistula had followed appendicitis, that in none did the fæces make their exit through the appendix, but through other portions of the intestines, showing that the inflammatory deposit closing the appendix was even stronger than the healthy bowel.

The mortality following operations for appendicitis was mainly due to general septic peritonitis and to intestinal obstruction.

If we looked into the cavity of a fully developed abscess, such as he had been considering, we could readily see how these complications might follow the search for or removal of the appendix. The cavity of the abscess was lined with a thick layer of grayish, poorly organized, aplastic lymph filled with micro-organisms. The appendix lay buried beneath this lymph, and its cavity communicated freely with the general abscess cavity. The opening could occasionally be seen, and was often the only guide by which the position of the appendix could be recognized.

To tear up this fragile and infected lymph and distribute it through the peritoneal cavity while searching for and liberating the appendix would greatly increase the probability of establishing a general septic peritonitis.

Intestinal obstruction following operations for appendicitis was probably due to kinking of the recently separated intestines. As they reunited, covered and stiffened as they were by inflammatory deposits, they could not adjust themselves as readily as at the first formation of the abscess.

To avoid any misunderstanding he would state that it was only in cases of circumscribed abscess that he had been permitting the appendix to remain.

When the appendix was still unruptured, or when it had ruptured and general peritonitis had occurred, or when obstruction was present, he was in the habit of removing it.

Dr. **Orville Horwitz** had had the pleasure of assisting in several of the cases reported. Three months before he had operated in a case of appendicitis with circumscribed abscess. It was impossible to find the appendix without an extensive search. He therefore opened the abscess and packed the wound. The patient made an excellent recovery without any trouble.

Dr. **John B. Roberts** said that in cases where he did not expect to remove the appendix he had cut through the side and behind the peritonæum entirely. He thought that in this way there was less liability of infection of the peritonæum.

Dr. **Thomas R. Neilson** said that two years before he had assisted one of his colleagues at the Episcopal Hospital in a case of appendicitis where the abscess was post-cæcal. The incision was first made in the usual position, but he suggested that it be closed and another incision made in Petit's triangle, so that good drainage would be secured. This was done and the patient made a good recovery.

In a patient nine or ten years of age, with a large collection of pus, post-cæcal, he had opened and drained, and subsequently, when the health had improved, he had operated from the front and removed the appendix. The patient was now entirely well.

Another case was that of a man fifty years of age, who had had appendicitis the summer before last, and practically a self-opened abscess. Last winter he had come to the speaker with a sinus leading to this pus cavity. With the knowledge that he had then had he thought that the best thing was to drain from the back, which he had done. The result was that the posterior opening had closed and the anterior had closed for a time and then reopened. A month ago the patient had returned and he had removed the appendix. The appendix had been cut in two by ulceration.

He had had several cases in which he had followed the practice of not attempting to search for the appendix in a condition of acute abscess. He thought that the trend of all writing on this subject was in the direction of what Dr. Bartony had suggested—namely, not to search for the appendix at the risk of breaking down the wall of lymph and giving a chance to microbes. He had seen two patients so treated. One, who was in excellent general health, came back with pain in the iliac region, but this was traceable to indiscretion in diet. He was confident that the adhesions surrounding the abscess must, in the long run, lead to more or less trouble. It was, however, safer to leave the appendix alone, and if it did not cause further trouble it would be bad surgery to disturb it.

Dr. W. W. Keen would mention a case illustrating the danger of removing the appendix in some cases and also the need of prompt action. He had seen that morning a young man who, two years and a half before, had had a vague attack which must have been one of appendicitis. Fifteen months ago he had had a second attack, and five months ago yesterday the present illness had begun after a very hearty meal. He had recovered after some two or three weeks, but still had a little pain in the right iliac fossa. Eight days ago he was seized with a prostrating illness, with a temperature of 103°. When the speaker saw him he was wasted to an extreme degree and sweating, with contracted pupils from opium, and in a state of most profound sepsis. The abdomen was flat on percussion in the lower segment and very tympanitic from two inches above the pubes upward. The speaker opened the abdomen in the middle line, and a large quantity of fœtid pus mingled with gas escaped. With his finger in the cavity he could reach nearly to the anterior superior spine of the ilium on the right side and half-way to the spine on the left side. He did nothing but introduce two drainage-tubes and make a counter-opening at the extreme right border and pass a piece of gauze drain. To search for the appendix in such a case would be most unwise.

Dr. Roberts said the difficulty was to decide in what cases to operate and in what cases not to operate. Two months before he had seen a man in the country with a history of appendicitis two months previously. He had a well-marked lump in the right side of the abdomen, with a normal temperature. He could flex the thigh without pain. From the symptoms and the history, he thought that the case was going on rapidly to a cure and did not recommend operation. He had heard nothing from the case for a month, when the physician came and stated that there was a swelling in the groin. He found an abscess burrowing down from the appendix into the inguinal region. He opened the cavity and inserted a drainage-tube and washed it out. He had heard that the man was improving, when again the physician came, stating that the man had had a chill and that a large amount of pus had been discharged from the opening. He then had the patient brought to the city. He reopened the original wound and made a new opening above, and found pus burrowing up around the kidney and down into the groin, entirely extraperitoneal. He simply laid everything open and made a wound six inches long, which he stuffed with gauze. This was a case in which, when he originally saw it, there seemed to be no reason for operating, yet it went from bad to worse.

He felt inclined, as a rule, not to search for the appendix if there was a large abscess. In some cases he preferred to make the opening in the lateral aspect and drain in that way. Whether or not these cases were permanently cured, he was unable to say.

Dr. Keen said that, as a rule, he removed the appendix. He thought that it was bad surgery to leave the appendix unless the adhesions were very marked and could not be separated without the risk of harm. Where there was liability of breaking into the general peritoneal cavity he would not search for the appendix. Where there was a tumor he would make the incision over the tumor. He thought that we should not open the peritoneal cavity. It was rare to have an appendicitis going on to a condition of distinct tumor without pus being present. He would rather operate before any appreciable tumor had formed. In cases of tumor he almost invariably operated, even with a normal temperature or a declining temperature.

Dr. Orville Horwitz said there was one symptom which he thought aided in the diagnosis of pus, and that was pain down the thigh, especially on motion.

The Surgical Relations of the Thoracic Duct in the Neck, with the Exhibition of Two Dissections made by Mr. Ward Brinton.—Dr. John H. Brinton read a paper with this title. He showed dissections illustrating the two most common terminations of the thoracic duct. He had always supposed that the anatomical relations of the ending of this duct were not more abnormal than those of any other duct or vessel in the body. But, from the study of several dissections, and especially from the comparison of the descriptions given by various anatomical writers, he found great diversity in this respect. The general law was that the duct discharged its contents into the great veins, jugular and subclavian, at the base of the left side of the neck. This was done in several ways.

In the first of these dissections made by Mr. Brinton there was the regular or normal type, the duct curving over the apex of the pleura and terminating exactly in the angle formed by the junction of the subclavian and internal jugular veins. In the second dissection we found the duct dividing into two branches, which formed a circle by their union above. From this circle one trunk arched outward and divided into three branches. Two of these emptied into the subclavian at the distance of a quarter and half an inch from the internal jugular junction. The third branch emptied into the internal jugular. Between these divisions passed a communicating branch. A large branch was also given off from the right side of the circle. This passed upward, turned to the left, and, deeply seated, crossed the neck transversely. The last portion of this branch was uninjected.

From the examination of these dissections the two typical terminations of the thoracic duct as described by Meckel could be studied. In most cases it emptied into the angle of union of the internal jugular and subclavian veins by one trunk; when more than one trunk existed the terminations of the thoracic duct were in both the internal jugular and subclavian veins. The duct, as stated by this observer, rarely opened into only one of these two veins.

In Quain's *Anatomy* it was stated that the thoracic duct often divided into two or three branches, which terminated separately in the great veins, as in the second dissection shown. Sometimes these several ducts again united in a common trunk, and occasionally one of the branches might pass across and empty into the veins of the right side of the neck. The duct had also been known to terminate in the azygous vein. According to Sappey, there were many varieties of termination; Professor Harrison Allen, in his *Treatise on Anatomy*, stated that the thoracic duct might empty into the jugular, the azygous, or the left innominate vein; infrequently it might be double. Sometimes as many as six terminal vessels were present, which were received into the subclavian, jugular, vertebral, and axillary veins.

The irregular terminations of the thoracic duct were alluded to by Henle and by Breschet. The latter, in his *Système lymphatique*, described minutely the many varieties, and instanced one case, cited by Haller from Bartholin, of the communication of a duct branch with the vena cava.

The formation of circles, or insulæ, as seen in the specimen shown, was also referred to. The multiple termination of the duct was frequently met with in animals.

Hyrtl, so accurate and practical, told us that the varieties of termination of the duct were very numerous, and did not in the least interest the practical surgeon. He could not but think that the latter remark was too sweeping, especially in cases where any portion of an arch formed by irregular terminal branches reached high into the neck. If drawn upon or stretched by contracting and indurated tissues, or during an operation, it might easily be cut or torn. In an instance where a duct branch passed transversely for a considerable distance to empty into the subclavian vein, it certainly might readily be endangered. It seemed to him, therefore, that the possibility of irregular and manifold endings of the thoracic ducts must be considered by the practical surgeon, and that in operating in this deep-seated, dangerous region he should bear in mind its recognized abnormities.

That he had not overrated the chances of accident to the thoracic duct and its terminations would, he was sure, be evident on the presentation of the next paper, by Professor Keen.

Operation Wounds of the Thoracic Duct in the Neck, with a Resume of the Two Prior Recorded Cases and Two Additional Cases.—Dr. W. W. Keen read the following paper: When we consider the frequency with which operations are done on the left side of the neck in the vicinity of the junction of the jugular and subclavian veins for the removal of enlarged glands, for tumors, for goître, etc., and of stab and other wounds, it is surprising that there are not a number of instances of wounds of the thoracic duct. The danger of wounding it may be greatly increased by the fact that Dieterich (Henle's *Anatomy*, 1876, iii, 453) has found the arch of the duct as much as five centimetres and a half (over two inches) above the top of the sternum and touching the thyreoid gland. Yet, so far as my investigations have gone, I have only been able to discover two cases of wound of the cervical portion of the duct reported in surgical literature. To these to-night I add two more, one of my own and another the notes of which have been kindly furnished me by Dr. A. M. Phelps, of New York.

Even in war, wounds of the duct in any part of its course are practically unknown. In neither the Italian war of 1859, the Crimean war, nor our own late civil war, is there a single instance recorded.

Case I (Cheever's case).—Dr. Cheever reports in the *Boston Medical and Surgical Journal* for 1875, page 422, the case of a tumor of the neck, during the removal of which "the subclavian vein and a large vessel near the internal jugular were both wounded. The distended veins mixed up with the friable glandular growth gave way repeatedly under the forceps and ligature. At this time occurred a new source of difficulty. A transparent, viscid, coagulable, and colorless fluid ran out from the tumor and from the lower corner of the wound in quantities as large as an ounce at a time, some six separate times. Together with the dark venous blood, this fluid constantly obscured and filled the bottom of the neck whenever pressure by the finger or sponges was taken off." The inner two thirds of the clavicle were then removed. "The subclavian artery was sought and pushed aside and an aneurysm needle passed between it and the vein, first out toward the shoulder, and a ligature tied; and second, close to the sterno-clavicular articulation, where the needle and ligatures surrounded the venous trunks at or upon their junction in the left vena innominata. The artery was not wounded nor tied. All bleeding now ceased, but the transparent fluid still oozed out moderately. The wound was lightly packed with sponges and ferric alum; no hæmorrhage occurred, and the transparent fluid did not soak through the sponges. The patient died from shock and exhaustion thirty-six hours after the operation. "No formal autopsy was made, but an examination of the wound showed the subclavian vein tied externally, and also at the junction of the internal jugular and subclavian. The remains of the tumor extended two inches below the clavicle, but were enucleated without piercing the pleura. This fragment of tumor had incorporated into itself several venous trunks or sinuses caught and entangled in the gradual agglomeration of glands. There was no opening into the pleura, no sac running down into the thorax or axilla, no cyst in any direction. The source of the transparent effusion could not be traced. There would seem to be but little doubt that this fluid was lymph from a large branch of the lymphatics in the tumor, or more probably from the thoracic duct where it arches over to join the left subclavian vein. In contact with, if not surrounded by, the glandular enlargement, its thin and transparent walls were readily wounded in trying to remove the lower part of the tumor. No other source for the clear fluid could be found, there being neither cyst, hydrocele of the neck, nor pleural effusion to account for it. The fluid under the microscope exhibited no cells save a few stray blood corpuscles. The patient having fasted for twelve hours before the operation, there would be little, if any, of the milky emulsion of chyle in the duct.

"The fluid poured out of this wound coagulated after contact with the air in a firm jelly, just as blood coagulates. This, no doubt, was due to its fibrin. Its large quantity pointed to a considerable duct as its source, although it must be borne in mind that the whole lymphatic system of the neck was probably vastly enlarged, and secreted great quantities of lymph. Very probably the waste of nutritive plasma by this leakage of lymph in the wound hastened the exhaustion of the patient, and, if due to a wound in the thoracic duct, would have precluded his recovery."

Case II (Boegehold's case, *Arch. f. klin. Chir.*, 1893, vol. xxix, p. 443).—In March, 1880, Wilms extirpated a tumor as large as a fist from the left side of the neck of a stout man forty-five years of age. In the course of the operation Wilms gradually neared the junction of the subclavian and jugular veins. As he was carefully scraping the tissue with a sharp spoon, suddenly there poured out over the operation field a stream of whitish fluid the diameter of a straw, which mingled with the rather freely flowing blood. This fluid could not well be anything else than chyle, for a wounded lymph vessel would have given exit to a clear, or at the most a slightly yellowish, but not whitish, fluid. There was no abscess nor any purulent pleurisy. After this wound of the thoracic duct, the extirpation of the tumor was terminated at once. The milky fluid no longer escaped, and on account of the considerable hæmorrhage the idea of securing it in the depth of the wound was abandoned. The wound was then packed with salicylic wool and an antiseptic bandage applied. The packing was removed the next day without any further appearance of the chyle. The patient recovered without incident, and six months afterward died, presumably from pulmonary metastasis of the carcinoma.

Case III (Case of Dr. A. M. Phelps, of New York; personal communication).—June 4, 1893, at the Mary Fletcher Hospital, Burlington, Vt., Dr. Phelps operated on a malignant tumor of the left side of the neck. "It was found that the jugular vein passed through the tumor, and this necessitated the removal of three inches of the jugular, near its junction with the subclavian. The tumor extended downward underneath the subclavian vein and involved the deep muscles of the neck. The wound was dressed four days later. There had been a constant profuse discharge, which at first was supposed to be serum, but its color, like that of skimmed milk, and its source from a single point in the wound, as well as its quantity, soon forbade that presumption. I estimate that about three pints a day had been lost. It was sufficient to saturate daily ten or fifteen ordinary bed-sheets folded in a number of thicknesses, in addition to saturating the surgical dressings. The man was rapidly losing flesh. A consultation of staff was held on June 11th, and the consensus of opinion was that the thoracic duct had been severed. The point of a probe the size of a large knitting-needle inserted at the point of evacuation entirely stopped the discharge. The point from which the liquid issued was caught by forceps, which were allowed to remain in place three days. The patient gained a pound a day after the discharge was stopped, and made an excellent recovery."

The duct cut, in his opinion, was one of the divisions or ramifications of the thoracic duct, but the staff thought that the main trunk had been severed.

The fourth case is my own.

Case IV.—Miss S., aged twenty years, was first brought to me in November, 1892, by Dr. Melcher, of Mount Holly, N. J. There was a small enlarged gland on the left side of her neck above the clavicle, a scar at a corresponding point on the right side, and another scar at the upper border of the right breast. From these two places showing scars Dr. Melcher had removed glands which were undoubtedly tubercular. Just below the right clavicle and a little external to its center was a tumor, evidently deep in the apex of the right axilla, firmly attached so as to be practically immovable, and extending, so far as could be ascertained, half way or more from the clavicle to the axillary border. It first appeared about a year ago. I judged it to be a series of enlarged glands, probably attached to the vessels. She had occasionally tingling and numbness in the right arm, and slight œdematous swelling. Soon after she was here Dr. Melcher made an attempt to remove the tumor, but the hæmorrhage was so great as to deter him, and he closed the wound, from which she made a good recovery.

Operation, Jefferson Hospital, January 28, 1893. I made an incision almost vertically in the axis of the body, from the clavicle about four inches downward. I came upon the tumor as soon as I was through the great pectoral muscle. Finding its extent, especially toward the axilla, greater than it appeared from the outside, I made two transverse incisions, converting the whole incision into a cross. I first dissected from the clavicle downward. I found the tumor adherent, not to the clavicle, but to the second rib and the costo-coracoid membrane. With a good deal of care and difficulty I was able to separate the upper border of the tumor from the clavicle and work my way downward and also outward toward the vessels. In a few moments I saw a part of the tissue collapse with inspiration, and I recognized that this was the subclavian vein.

I was finally able to remove the entire tumor, but only after one of the most difficult and tedious dissections I ever made. The tumor was a mass of enlarged glands extending three quarters of the way around the axillary vessels, the upper border alone being free. It was with the greatest difficulty that I could separate the tumor from the vein to which it was especially adherent, but I finally succeeded. The dissection took over an hour and the whole operation was nearly an hour and a half long. I buttonholed the axillary skin at its posterior border and carried out a drainage tube, otherwise closing the wound and dressing it as usual. The hæmorrhage was moderate, not over eight or ten vessels requiring ligation.

February 11, 1893.—Her recovery was rapid and gratifying. The highest temperature was 99·8°. The drainage tube was removed in forty-eight hours, and the sutures on the third, fifth, and seventh days. On the eighth day she went home perfectly well.

Dr. Kyle reported as follows on the specimen: "Frozen sections from this specimen showed it to be tubercular. The sections were so arranged as to include portions of dense tissue, also the caseous mass. Macroscopically and on cutting through the specimen it resembled lympho-sarcoma, which appearance could be produced by the enlargement of the gland, which would cause pressure on intervening tissue, giving it that peculiar fibrous appearance. By the methyl violet and blue stain the tubercular condition was easily recognized."

She returned to me December 12, 1893, with enlarged glands in the neck on both sides, just above the clavicles and in both axillæ, especially the right one. These glands were high up in the axilla on both sides and were apparently (especially on the right side) very adherent. In the neck the glands were rather peculiar in that while they were very perceptible as tolerably large, nodular masses, evidently composed of a number of glands, the inner portion on both sides was soft, markedly lobular, and apparently contained some fluid. Those on the left side of the neck were larger and gave her a good deal of annoyance and pain, somewhat resembling in this respect those in the right axilla. I advised her therefore to have them removed.

Operation, Jefferson College Hospital, December 15, 1893. Present, Professor Clayton Parkhill, of Denver, and Dr. Hearn and Dr. William J. Taylor. Dr. J. Chalmers Da Costa and Dr. Weaver assisted me. When the patient was etherized and recumbent, I saw a marked change in the condition of all the tumors. The one in the left axilla just below the clavicle could not be found. That on the right side was apparently very much diminished, as were both of those in the neck, the right one being partially perceptible and the left moderately so. The soft, fluid part of the cervical swellings had entirely disappeared.

The right axilla was opened by an incision passing along the border of the tendon of the great pectoral muscle. The operation was tedious and very difficult mechanically, by reason of the extensive and very dense adhesions from the periadenitis and from the former operations. The adhesion to the axillary vein was particularly solid and sometimes was almost as tough as if it had been made of leather. However, after very slow, careful, and patient dissection I was able to get out a large mass of glands.

Having finished the dissection of the glands in the right axilla, I next made an incision above the left clavicle to remove the glands there. There was a great deal of periadenitis, creating very firm adhesions, especially downward and inward toward the junction of the left internal jugular and subclavian veins, both of which were laid bare nearly, but not to their junction. I was carefully dissecting these adhesions away with Allis's blunt dissector, when suddenly I made a small opening in what was apparently an adhesion, and instantly there welled out from it a perfectly limpid fluid. At first I thought I had opened a cyst; but, on observing that the fluid escaped continuously and with a very evident respiratory rhythm, and that the fluid apparently flowed from a tear a fourth of an inch in length, from a tube about an eighth of an inch in diameter, it occurred to me that it was either one of the dilated left lymphatic ducts just before their entrance into the thoracic duct, or that, more likely, it was the thoracic duct itself. About two ounces of fluid escaped in all. I sucked up a little of it with a hypodermic syringe. It coagulated in a few minutes. Dr. Da Costa suggested that the distinction between the two fluids—*i. e.*, from the lymphatic and the thoracic ducts—could be made by the fact that the fluid in the thoracic duct should be milky, but as she had taken no food since the previous evening (eighteen hours) this gave no help. Against its being the thoracic duct was the fact that it was just behind the upper border of the clavicle, and therefore lay too high for the thoracic duct; but as the glands were being dragged upward, this objection I felt was not valid. Also, although I could introduce a grooved director into the tube from which the fluid was escaping, the director only entered about a half to three quarters of an inch when it met some obstacle. In such a locality and in such a novel experience, I did not care to enlarge the boundaries of science at the possible expense of my patient, and hence I decided to desist from further exploration and remedy the apparent mischief at once. Accordingly I closed the opening by the pressure of one finger, and carefully removed the glands, which were almost entirely loosened at the moment of the accident. Then I seized the two edges of the opening with forceps, and by means of the finest Hagedorn semicircular needle and fine silk I closed the wound. Some little leakage still took place. There was also a little of a similar fluid from the upper part of the wound, but it seemed a general oozing rather than from any distinct vessel. The remainder of the operation was completed with ease, although it was extraordinary what a large mass of glands I removed, in view of the almost utter inability to perceive them when she was etherized and recumbent. Nothing was found to account for the soft and apparently fluid part of the tumor noticed when she was first examined. This soft mass was at least an inch and a half external to the site of the opening into the thoracic duct and nearly as much above it.

A drainage tube was inserted into the wound, but was removed after five hours, having served its function of conducting off most of the bloody wound-fluids, and I feared that its retention would be followed by a lymphatic fistula. Any escape of lymphatic fluid from the thoracic duct I thought should be repressed as quickly as possible by absolute closure of the wound. During the five hours the amount of wound-fluids was very large for so small a wound, amounting to nearly a pint, and its light color showed that the small amount of blood was diluted with a great deal of clear fluid. The dressing the next day was partially saturated by probably an ounce or two, and after that was dry.

On the eighth day after the operation, having made an absolutely uneventful recovery, she went home. Not the slightest evidence of trouble appeared in the wound in the neck—neither swelling, redness, nor pain. Her weight on December 11th, four days before the operation, was a hundred and six pounds, and eight days after it, in about the same clothing, a hundred and three pounds. Her highest temperature was 99·8° on the evening of the operation. The following table shows her weight since the operation:

	Weight.
December 28, 1893	100 pounds.
January 6, 1894	101 "
" 12, "	100·5 "
" 19, "	100·75 "
" 26, "	100·75 "

March 15, 1894, same weight; her cough troubles her considerably.

Dr. Kyle reported that in the fluid there were many lymphocytes or lymph-corpuscles of different sizes; some few were slightly granular, and there were many fat or oil globules, small in size, but large in number. The macroscopic appearance of the fluid was slightly opaque.

Remarks.—First. The anatomy of the thoracic duct. As has been shown here to-night in the beautiful dissections of Mr. Ward Brinton, the thoracic duct does not always empty by a single mouth at the junction of the left jugular and subclavian, but is apt sometimes to break up into two or three ducts or even into a delta, some of the branches emptying into each of these large veins, and, as Dr. Phelps finds from his dissections of the duct, into other deep veins of the neck. Verneuil (*Le Système veineux*, 1853) states that Boullard in twenty-four cases found it to empty by one mouth eighteen times, by two mouths three times, by three mouths twice, and finally once by six mouths, of which two opened into the subclavian, two into the jugular, and one each into the external jugular and the vertebral veins. Lacauchie (Henle, *loc. cit.*) gives an instance of four terminal canals. In twenty-one injections of the duct Boegehold found that in two cases it divided at its anastomosis with the veins into three or four branches, and in one case, about two inches before its termination, a branch as large as a straw passed to the subclavian, the main trunk emptying at the angle between the subclavian and the jugular. It is therefore possible in all these cases of wound that not the main trunk, but one of these branches—perhaps, as in Boegehold's case, a branch as large as a straw—was injured. Bayford (Boegehold, page 447) records one case of dislocation of the thoracic duct from a curvature of the spine, which might increase materially the possibility of its being wounded should an operation have to be done in such a case. Boegehold (page 455) also quotes a case from Scherb of the partial obstruction of the duct by a calculus. The occasional great height of the final curve of the duct in the neck has already been mentioned.

Secondly. The character of the fluid. There could be no possibility that the source of the fluid was other than the thoracic duct in Boegehold's and Phelps's cases, as, from its milky color, the fluid was evidently chyle. In the other two cases the fluid has been so clear that it resembled serum. I do not know the relation of the hour of operation to the hour of the last meal in Cheever's case. In my own case the patient, having had two prior operations, and suffering from ether nausea, had refused to eat any breakfast whatever, and when I operated, at twelve o'clock noon, it was eighteen hours since she had eaten the previous meal. The quantity of the fluid in Phelps's case was very extraordinary, and leaves no doubt that it could only have been from the thoracic duct. In Cheever's case and my own the quantity and character of the fluid make it reasonably certain that it was from the duct, but it is not so demonstrably sure as in the other two cases.

Third. Treatment. Cheever's case was so speedily fatal from other reasons that no inferences can be drawn from it. In Boegehold's case packing was sufficient to arrest the flow and the patient recovered. In Phelps's case pressure forceps arrested it entirely. In my own case the suture of the vessel was perfectly feasible, and the result was most satisfactory. It seems to me clear that if this procedure can be adopted it should always be done. I very anxiously watched the weight of my patient from week to week for the first few weeks after the operation. Then, finding that she was not losing ground, it was clear to me that she had permanently recovered from the accident, which at first caused me much anxiety.

Fourth. Experimental researches. Boegehold, so far as I know, is the only one who has tested the question by experiment. In his first two experiments, in dogs, he exposed the thoracic duct at its entrance into the veins and wounded it with scissors. Pneumothorax followed, but disappeared within five days. Eight days after the accident the dogs were killed. No trace of pleurisy was found, and the duct at the level of the fourth dorsal vertebra was surrounded with a thin, whitish-red clot of fibrin. The duct was divided for over one fourth of its circumference. In the next three experiments the duct was cut obliquely. On the following day the dogs were evidently sick, with a rapidly increasing frequency of respiration. On the evening of the third or fourth day they died, and at the autopsy the pleural cavity was found full of chyle. The cause of death was compression of the heart and lung from effusion of chyle. In the sixth and seventh experiments he placed a cannula in the duct. This was followed by suppurative pleurisy, with death respectively on the fourteenth and tenth days. At the autopsy the pleura was found covered with fibrinous clots, but as the fever had subsided on the fifth day, he ascribed death to the loss of chyle. In the eighth experiment he ligated the ends of the duct in the neck. On the fourth day he inserted his finger into the pleural cavity. The duct was easily found, as it was distended with chyle. He wounded it slightly with scissors, and seventy-two hours later the dog was killed. The duct and the receptaculum were distended with chyle, and at the site of the wound a small red fibrinous clot was found. Very little chyle had escaped on account of the smallness of the wound.

As a result of his experience he thinks that the complete integrity of the duct for the support of life is not absolutely necessary. He gives a number of instances of complete obliteration or compression of the duct without any symptoms. The collateral circulation of the lymph seemed to be established, and Schmidt and Mulheim have shown experimentally that the closure of the duct in dogs, in whom the canal is always single, did not affect either the digestion or the absorption of albuminous matter. An injury followed by closure of the duct, therefore, is not necessarily fatal. The danger is that if the duct is not closed, either compression of the lungs and heart from the constantly augmenting accumulation of chyle in the pleural cavity will prove fatal, or that the loss of nourishment will be lethal if it escapes externally. Wounds of the duct seem to be entirely capable of healing. Should the heart and lungs be compressed, clearly the pleural cavity should be opened in order to avoid the immediate danger of death from compression, as is shown by Kirchner's case (*Arch. f. klin. Chir.*, 1885, p. 156). This seems to have been an undoubted and severe rupture of the thoracic duct within the thorax, and yet was followed by recovery. It shows that even rupture of the duct may not necessarily be fatal.

A little girl, nine years of age, healthy although not very strong, was pushed violently against a window-sill, injuring her at the level of the third rib. Marked orthopnœa, with cyanosis and sweating, and dilatation of the nostrils followed in the course of two weeks. The right half of the thorax was broader than the left up to the level of the spine of the scapula and the third rib. The heart was pushed to the left, and the liver extended two fingers' breadth below the border of the ribs. The temperature was normal. The right chest was punctured in the fifth intercostal space and a litre of fluid resembling milk was poured out. Examination by the microscope showed undoubtedly that it was chyle. Ten days later the dyspnœa was so great that puncture was again contemplated, but under warm baths and slight purgation by senna the improvement was such that puncture was not done a second time, and complete recovery followed. In six months the child was better than prior to the attack.

Kirchner states that, even including some uncertain cases, there are but seventeen on record of injury of the thoracic duct, either in the neck, chest, or abdomen; six resulting in chylous ascites; nine in chylo-thorax; one of hydrops lacteus from the collection of lymph in the mediastinum; and finally, the case of Boegehold, the only instance he gives of injury in the neck. The three additional cases I have reported here bring the total number up to twenty, and of wounds in the neck alone to four.

Busey (*Trans. of the Assoc. of Amer. Phys.*, 1889, vol. iv, p. 76) refers to a number of cases of injury to peripheral lymphatics by bleeding, etc., and also the effusion of chyle into the thorax, abdomen, tunica vaginalis testis, etc. In the discussion Welch said: "I do not think that the mere occlusion of the thoracic duct, still less obstruction to the venous flow in the subclavian veins, is followed by serious interference with the flow of lymph and chyle. I have found the thoracic duct completely occluded by a tuberculous thrombus in a case of acute miliary tuberculosis without any such effect."

The pressure in the thoracic duct is not very high. According to Weiss, in the neck it reaches from nine to fifteen millimetres of mercury.

Dr. John H. Brinton said that, in such a case as Dr. Keen had reported, it was possible that the vessel wounded was one of several branches.

Dr. Joseph Hearn asked what would have been the objection to ligature in this case.

Dr. Keen said that the statistics which he had quoted showed that the termination in multiple ducts was quite rare, the usual termination being by a single duct. In this case the vessel cut had certainly been as large as a straw. He would object to the use of a ligature unless he was sure that there were other ducts. If he was sure of this he should not hesitate.

Dr. James M. Barton said that, in cases of longitudinal wounds in veins, he had closed them laterally by grasping the edges of the wound with two or three forceps and ligating. This made a bulky mass that encroached too much upon the caliber of the injured vessel. It had occurred to him that it would be better to close the wound in the vessel with a broad pressure forceps and allow it to remain. This would be even better than suture, for, no matter how fine the needle, the needle-holes might leak, and, in addition, sutures would encroach more upon the caliber of the vessel than a properly applied pressure forceps would.

Dr. William J. Taylor said that, some years before, he had reported a case of hæmorrhage from the superior longitudinal sinus, which he had been able to control by clamping the wound in the sinus with a hæmostatic forceps. This he had allowed to remain for three days. The patient had made a complete recovery.

Dr. T. S. K. Morton said that some time before Dr. Edward Martin had made an interesting suggestion as to the treatment of lateral wounds of veins, etc., which was to use fine catgut soaked in alcohol, as the swelling of the catgut would close the small holes made by the needle.

New Inventions, etc.

A NEW LACRYMAL AND MIDDLE-EAR SYRINGE.

By Frank C. Todd, M. D.,

MINNEAPOLIS, MINN.

The value of antiseptic irrigation is unquestioned in the treatment of a lacrymal abscess, as is also that of the copious use of a warm boric-acid solution or ordinary astringents following the operation for stenosis for epiphora.

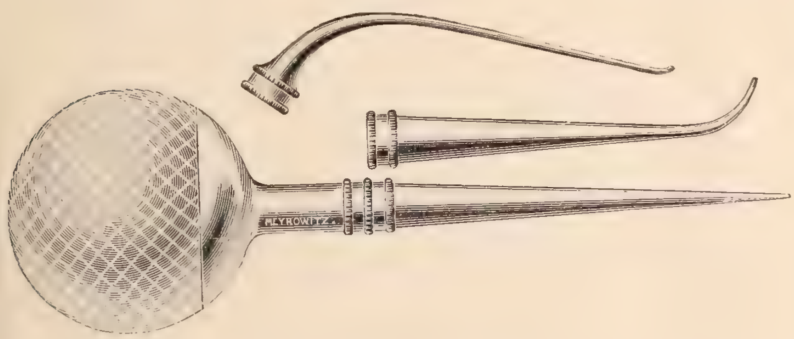
The piston lacrymal syringe, commonly used, is unsatisfactory, as it is continually getting out of order. It injects either air or bubbles into the lacrymal canal instead of the solution, or the piston stops half way, or goes by jerks, thus annoying the operator and causing unnecessary pain to the patient. Therefore one never feels confidence in the use of it.

Dr. Colburn's syringe is found useful as a means of applying cocaine or like remedies, but is useless for the purpose of antiseptic irrigation, and is as uncontrollable as the piston syringe.

This new lacrymal and middle-ear syringe, made by E. B. Meyrowitz from my design, is intended to obviate the objections to these instruments and retain the advantages of both. There are two lacrymal points and one middle-ear point, as shown in the cut. These points are small enough to introduce into the lacrymal or auditory canals and yet sufficiently large to prevent their breaking.

The lacrymal points may be introduced in the same way as those of any lacrymal syringe, the choice of the two depending upon the surgeon's habit of operating behind or in front of his patient.

After the introduction, the first and second fingers are placed upon the shield, and the thumb is placed upon the bulb itself. By closing the first two fingers firmly around the instrument the operator obtains perfect control of the syringe. He then forces the current into the canal by pressure of the thumb, using as much or as little force as is desired.



The bulb is of such a size that a copious stream may be used, and one introduction, as a rule, will suffice for a thorough cleansing of the parts.

The points and the shield are detachable, and thus the instrument may be kept aseptic, and even the bulb may be washed in any of the ordinary antiseptic solutions.

The instrument is so constructed that the point may be taken off in order to fill the bulb, the hole in the point being so small that otherwise the bulb fills slowly. It will be observed that the point for the introduction of fluids into the middle ear is bent at an angle that enables the operator to retain his view.

Miscellany.

The American Laryngological Association will hold its sixteenth annual congress at the Arlington Hotel, Washington, on May 30th and 31st and June 1st, under the presidency of Dr. D. Bryson Delavan, of New York. In addition to the president's address, the following papers will be read: Nasal Polypus; its Association with Ethmoiditis and its Treatment by Resection of the Middle Turbinated Body, by Dr. W. E. Casselberry, of Chicago; Papillary Hypertrophy of the Nasal Mucous Membrane compared with a Papillary Fibroma or Papilloma, by Dr. Jonathan Wright, of Brooklyn; The Use of Metallic Electrodes in the Treatment of Nasal and Post-nasal Disease, by Dr. Clarence C. Rice, of New York; Observations on some of the Results of Cutting Operations on the Nasal Sæptum, by Dr. Thomas R. French, of Brooklyn; Some Comments on the Surgery of the Antrum of Highmore, by Dr. W. H. Daly, of Pittsburgh, Pa.; A Case of Odontoma invading the Antrum of Highmore and corresponding Nasal Fossa, with the Application of an Improved Method of Anæsthesia adapted to Operations in the Mouth, and A Case of Foreign Body (Gold Coin) engaged in the Ventricles of the Larynx, by Dr. A. W. de Roaldes, of New Orleans; Foreign Bodies in the Larynx, with Report of a Case, by Dr. Charles M. Shields, of Richmond; Three Cases of Papilloma of the Larynx, by Dr. Charles H. Knight, of New York; Report of a Case of Sarcoma and of One of Epithelioma of the Larynx, by Dr. Arthur Ames Bliss, of Philadelphia; A Case of Laryngectomy by a Novel Method, by Dr. H. L. Smith, of New Haven; Two Cases of Tumor of the Epiglottis, by Dr. J. Solis-Cohen, of Philadelphia; Singers' Nodes, by Dr. F. I. Knight, of Boston; A Case of Cyst of the Larnyx—Pharyngomycosis, by Dr. E. F. Ingals, of Chicago; Exudative Pharyngitis, by Dr. W. C. Glasgow, of St. Louis; A Case of Sarcoma of the Tonsil, by Dr. A. W. Watson, of Philadelphia; The Importance of an Early Diagnosis of Malignant Tumors of the Throat, by Dr. J. W. Gleitsmann, of New York; On Neurasthenic Throat, with Illustrative Cases, by Dr. W. P. Porcher, of Charleston; and A Contribution to the Study of the Ætiology of Rheumatic Affections of the Body due to Tonsillar Diseases, by Dr. H. L. Wagner, of San Francisco. In addition, there will be a discussion on the Surgery of the Accessory Sinuses of the Nose, by Dr. F. H. Bosworth, of New York, Dr. J. H. Bryan, of Washington, Dr. J. N. Mackenzie, of Baltimore, and Dr. J. O. Roe, of Rochester.

The New York Academy of Medicine.—The programme for the meeting of Thursday evening, the 3d inst., included a paper on The Adoption by the Academy of a Nomenclature for the Different Classes of Infectious Diseases, by Dr. W. H. Thomson, with a discussion by Dr. T. M. Prudden, Dr. H. M. Biggs, Dr. John Brannan, Dr. J. West Roosevelt, and others.

At the next meeting of the Section in Genito-urinary Surgery, on Tuesday evening, the 8th inst., Dr. R. W. Taylor will present pathological specimens and cases illustrative of the mixed malignant growth of the testicle; Dr. C. L. Gibson will present specimens and cases showing the result of castration for tubercular epididymitis, also read a paper on Castration for Tubercular Testis; and Dr. H. Goldenberg will read a paper entitled Posterior Urethritis, and the Diagnostic Value of the Modified Thompson Test.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 10th inst., cases will be presented and the subject of The Management of the Breast-fed Infant will be discussed as follows: Management of the Breast and Nipples before and during the Puerperal Period, by Dr. J. Clifton Edgar; Diet of the Nursing Mother, by Dr. Jerome Walker; Wet nursing: Mixed Feeding—Indications for Weaning; Examination of Breast-milk, by Dr. L. Emmett Holt; and Feeding after Weaning, by Dr. William L. Stowell. A general discussion will follow.

At the next meeting of the Section in General Surgery, on Monday evening, the 14th inst., patients will be presented by

Dr. R. F. Weir, Dr. W. T. Bull, Dr. V. P. Gibney, Dr. Robert Abbe, Dr. A. J. McCosh, and Dr. B. B. Gallaudet. Papers will be read as follows: The Influence of Physiological Rest on Prolapse of the Rectum, by Dr. J. D. Bryant; and Malignant Œdema, by Dr. George R. White. There will be an exhibition of pathological specimens and new apparatus.

Physical Fitness for Service in the French Army.—The *Province médicale* for March 31st contains an abstract of an article published in the *Bulletin officiel*, setting forth instructions which will, in the future, serve as a basis for the plan of operation in the examinations and in the recruiting bureau. This document carefully reviews all the preparations relative to the auxiliary service, to exclusion from it, to the enlisting, and to the pay and the pension. It indicates the method of examining men who are rendered incapable, by reason of sickness or infirmities, of serving, also the means of detecting those simulating sickness. The most interesting part of this document is the list of infirmities and deformities compatible with the auxiliary service. Men attacked with any one of these infirmities will not be called upon except in case of war or mobilization. Aside from these cases, young men who are simply sickly or of feeble constitution will be employed in the accessory service or in the section of administration. The following list is an enumeration of the infirmities under which are classed the men who are in the auxiliary service:

1. Feeble constitution.

2. Obesity.

3. Pityriasis and ichthyosis, if the first is not extensive and the second is not generalized.

4. Benign tumors, cysts, fatty tumors, etc., cicatrices situated in regions where they do not affect the ability to carry the regular equipments.

5. Nævi materni and erectile tumors which are but slightly developed or are not exposed to constant pressure.

6. Extensive alopecia independent of favus and of ringworm of the scalp; benign tumors of the cranium, such as wens and exostoses; horny outgrowths and cicatrices which do not cause any inconvenience other than that of annoyance in wearing the military cap.

7. Entire loss of the external ear, its partial adhesion to the skull, and malformations which are not very extensive.

8. Perforation of the membrana tympani without otorrhœal complications.

9. Extreme deformity.

10. Facial mutilations.

11. Symblepharon, which, unless causing much trouble in the movements of the eyelids, is no obstacle to the visual function.

12. Ciliary blepharitis without inversion of the eyelids.

13. Opacity of the cornea, exudations involving the pupil, according to the intensity of diminution of the visual acuity.

14. Myopia exceeding six dioptres, if the visual acuity can be brought to the proper limit by means of concave glasses, and if there are no extensive chorioid lesions.

15. Hypermetropia and astigmatism.

16. Functional strabismus.

17. The loss of a large number of teeth, if the gums are not altered, and if the condition of the subject is satisfactory.

18. Congenital or accidental harelip, if not very extensive.

19. Stuttering, if not sufficiently pronounced to prevent the intelligible transmission of orders.

20. Tumors of the neck, such as goître, serous cysts, and adenitis, slightly developed.

21. Deformities of the chest, such as sinking or protuberance of the sternum or of the ribs which does not detract from the functions of the internal organs; non-development, abnormal curvatures, pseudarthrosis of the clavicle, and deformities of the shoulder-blade which do not impede the movements of the upper limbs.

22. Inguinal and crural hernia which does not extend beyond the external orifice of the canal.

23. Cryptorchidism, when the subject presents the general characteristics of virility.

24. Congenital or acquired deformities which do not noticeably impede the functions, such as a voluminous and, at the same time, slightly deformed callosity, a moderate incurvation of the upper or lower limbs, inequality of the upper limbs, and contracture of the lower limbs if it results only in a slight lameness.

25. Varicose veins if they exist in the condition stipulated for non-acceptance in the active service.

26. Chronic hygroma and synovial cysts, if sufficiently pronounced for exclusion from active service, but not impeding the action of the joints.

27. Stiffness of a joint, with slight diminution of freedom in the movements, which does not perceptibly impede the action of the limbs, such as incomplete extension of the forearm on the arm and incomplete flexion of the leg on the thigh, the reverse movements being entirely free; permanent and complete flexion of the little finger of either hand, and incomplete flexion of several fingers.

28. Incurvation, loss, or mutilation of the fingers or of the toes, not compatible with active service, which do not noticeably embarrass the functions of the hand or foot.

29. Supernumerary fingers and toes, overriding of the toes, hammer toes, subungual exostosis presenting itself under the conditions named for non-acceptance for active service.

30. Defective stature.

A Circular of Information to Physicians regarding the Measures adopted by the Board of Health for the Prevention of Tuberculosis in the City of New York.—The following circular, dated February 13, 1894, has been issued by the board:

The communicability of pulmonary tuberculosis has been so thoroughly established, and is now so generally recognized by the medical profession throughout the world, that the Board of Health of New York City has determined that the time has arrived when active steps should be taken looking toward its prevention in this city. The board has therefore resolved to adopt the following preliminary measures:

1. The department will hereafter register the name, address, sex, and age of every person suffering from tuberculosis in this city, so far as such information can be obtained, and respectfully requests that hereafter all physicians forward such information on the postal cards ordinarily employed for reporting cases of contagious disease. This information will be solely for the use of the department, and in no case will visits be made to such persons by the inspectors of the department, nor will the department assume any sanitary surveillance of such patients, unless the person resides in a tenement house, boarding house, or hotel, or unless the attending physician requests that an inspection of the premises be made; and in no case where the person resides in a tenement house, boarding house, or hotel will any action be taken if the physician requests that no visits be made by inspectors and is willing himself to deliver circulars of information or furnish such equivalent information as is required to prevent the communication of the disease to others.

2. Where the department obtains knowledge of the existence of patients with pulmonary consumption residing in tenement houses, boarding houses, or hotels (unless the case has been reported by a physician and he requests that no visits be

made), inspectors will visit the premises and family, will leave circulars of information, will instruct the person suffering from consumption and the family as to the measures which should be taken to guard against the spread of the disease, and, if it is considered necessary, will make such recommendations for the cleansing or renovation of the apartment as may be required to render it free from infectious matter.

3. In all cases where it comes to the knowledge of the department that premises which have been occupied by a consumptive have been vacated by death or removal, an inspector will visit the premises and direct the removal of infected articles, such as carpets, rugs, bedding, etc., for disinfection, and will make such written recommendations to the board as to the cleansing and renovation of the apartment as may be required. An order embodying these recommendations will then be issued to the owner of the premises, and compliance with this order will be enforced. No other persons than those there residing at the time will be allowed to occupy such apartments until the order of the board has been complied with. Infected articles, such as carpets, rugs, etc., will be removed by the department, disinfected, and returned, without charge to the owner.

4. For the prevention and treatment of pulmonary tuberculosis it becomes of vital importance that a positive diagnosis shall be made at the earliest possible moment, and, that the value of bacteriological examinations of the sputa for this purpose may be at the service of physicians in all cases not under treatment in hospitals, the department is prepared to make such bacteriological examinations for diagnosis, if samples of the sputa, freshly discharged, are furnished in clean, wide-necked, stoppered bottles, accompanied by the name, age, sex, and address of the patient, the duration of the disease, and the name and address of the attending physician. Bottles for collecting such sputa, with blank forms to be filled in, can be obtained at any of the drug stores now used as stations for the distribution and collection of serum tubes for diphtheria cultures. After the sputum has been obtained, if the bottle, with the accompanying slip filled out, is left at any one of these stations, it will be collected by the department and examined microscopically, and a report of the examination forwarded to the attending physician free of charge.

5. The authorities of all public institutions, such as hospitals, dispensaries, asylums, prisons, homes, etc., will be required to furnish to the department the name, sex, age, occupation, and last address of every consumptive coming under observation within seven days of such time.

It is the earnest wish of the board of health that all practicing physicians in this city co-operate with the board in an earnest and determined effort to restrict the ravages of the most prevalent and formidable disease with which we have to deal.

The late Dr. Brown-Sequard.—The *Lancet* for April 14th contains a short account of this eminent physician, of which the following is the substance: Dr. Brown-Séquard was of French and Irish parentage, and was born in the Island of Mauritius in 1817. His earlier history is somewhat obscure, but it seems that he left Mauritius when still a child and went to the United States, where he received his early education. In 1838 he went to Paris, where he devoted himself almost entirely to experimental physiology, and in 1849 he described the sensory decussation in the spinal cord with which his name has since become so closely associated. He occupied himself chiefly in the study of nervous physiology and pathology, and established so great a reputation in that field that he was asked to deliver a course of lectures before the Royal College of Surgeons of England. These lectures aroused the keenest interest, not only because they gave a clear and concise account of the current knowledge of nervous physiology and pathology, but because they contained much that was new and the result of the author's experiments. The originality of his views, the care taken in the acquirement of this knowledge, and the charming personality of the man excited an interest in nervous physiology and pathology, and so successful were the lectures that, shortly after, he was asked to deliver them in Edinburgh, in Glasgow, and in Dublin. In 1859 he established himself in London, and was appointed physician to the National Hospital for the Paralyzed and Epileptic. He also joined the Royal College of Physicians of London. He stayed, however, only a short time in England, and went to America to accept a chair at Harvard University, where he remained five years. At the end of that time he returned to Paris, where he became professor at the École de médecine. In 1873 he returned to America and began to practice in New York, and edited, in connection with Dr. Seguin, the *Archives of Scientific and Practical Medicine.* In 1876 he was again in London delivering a course of lectures in which he combated the current doctrines of nervous physiology and also other theories which have since been generally accepted. Two years later he once more returned to Paris and succeeded Claude Bernard as professor at the Collége de France, where he remained until his death.

He was an honest, single-minded man, devoting all his energies during the last years of his life to the investigation of his testicular fluid. In everything that he did a patient search for knowledge and truth was one of his highest characteristics. The sacrifices he made can never be fully appreciated except by those who knew him best. The following extract from a letter to one of his friends will serve as an illustration of this: "I have a very much harder fight for the doctrines relating to the brain than I had, at the time I first became acquainted with you, for doctrines relating to the spinal cord. If I did not love truth much more than comfort, ease, and quietness, I would give up the painful, heavy task I have given to myself. So long, however, as I have a breath of power of mind and body, I shall continue the efforts begun in London."

Dr. Brown-Séquard was a man of simple habits, going to bed and rising very early, as he found these hours best suited to his work. He cared for nothing outside of physiology, and spent nearly 10,000 francs during the last two years in dispensing his extract gratuitously. The writer gives the following illustrations of how little he cared for money: A wealthy American asked him to go to Italy to see his son, and he refused on the ground that it was not a case where his advice was particularly indicated, and suggested another physician. The American wrote that it was Brown-Séquard he wanted, and offered the enormous sum of $50,000; but he had made up his mind in this particular case, and the money had no temptation for him. On another occasion he received, when in London, a telegram asking him to go to Liverpool to see a patient, and telling him that the fee would be $1,000. He replied that he should be in Liverpool in a day or two to sail for New York, when he would see the patient, and the fee would be five guineas. It is hardly to be wondered at, says the writer, that he died far from wealthy.

A Bit of Artistic Anatomy.—In the March number of the *Revue illustrée de polytechnique médicale et chirurgicale* Dr. Bougon makes the following statements: Let a man stand with his arms stretched horizontally one to each side, and to ascertain his height we have only to measure the distance from the tip of one hand to that of the other. If there is any error, the horizontal measurement is rather above than below the stature. Another way of ascertaining a man's stature is that of multiplying the length of his foot by six and five tenths. If we multiply by seven we get the maximum limit, if by six, then a minimum limit; the real stature falls somewhere between the two. This method of measurement gives more correct results with men than with women. From the tip of the chin to the beginning of the hair of the head is three times the length of the nose. The forehead does not generally measure the same as the nose, because the latter organ is not always situated in the middle of the height of the face. In spite of many individual differences, it may be said that, as a general thing, the forehead measures a little less than the nose, and that the nose is itself a little shorter than that portion of the face which is beneath it. In persons who have lost their teeth the distance from the nose to the chin may be so reduced that the end of the nose seems on the look-out to meet the chin, the point of which seems to advance like the tip of a Scotch shoe. The lowest foreheads are seen in women. In some women the forehead is not more than a third as high as the length of the nose, even when the hair is dressed in Chinese fashion; but this is exceptional. The ear has the same length as the nose. It is situated on a level with the nose when the head is held quite horizontal. The space between the two eyes is equal to the length of an eye. As a rule, beginners draw the two eyes too near together. It is considered by artists that in a human being of fine type the total length of the body is seven and a half times that of the head; as a matter of fact, it is never more than seven times that length, save in certain young persons who are tall and thin, with the head quite small.

The Ice-bag as a Cardiac Stimulant.—A writer in *La Médecine moderne* is quoted in *La Province médicale* for April 7th as saying that the application of an ice-bag over the heart, according to Dr. Jullien, is a powerful therapeutic measure. It seems that in 1887 M. Jullien read in the *Gazzetta delle cliniche* an essay on this subject by Dr. Silva, and was struck with the author's conclusions. Experimentation upon animals had shown the possibility of raising the blood pressure rapidly from a hundred and twenty millimetres to a hundred and seventy and even a hundred and ninety, and of diminishing the frequency of the pulsations considerably; and these results had been confirmed clinically. M. Jullien was not slow to verify these observations for himself. One day he was called to take charge of a patient attacked with typhoid fever. He advised treatment by means of cold baths, and transferred the patient, a large and strong young girl, to the care of a colleague. Soon afterward, however, his colleague's illness rendered it necessary for him to take charge of the case again. It was a grave one and the febrile phenomena were intense. The elevation of temperature proved rebellious to the use of cold water. Soon there was a typical picture of the ataxo-adynamic form of the disease. The patient had lost consciousness entirely and lay on the bed entirely uncovered in a tetanic attitude varied only by certain spasms of the head. The temperature remained all the time above 104°; the pulse had reached successively 120, 140, and 160. Under these circumstances M. Jullien fancied that the application of ice over the heart might constitute a last resort, and he made bold to carry it out. He admits that it was not without timidity that he placed the rubber bag on the region which scarcely showed the tumultuous and enfeebled beats of the exhausted heart. He watched the pulse closely, ready to stop the attempt at the first signal of danger. But in less than fifteen minutes he saw the number of the pulsations diminish and their amplitude increase; in a short time the almost imperceptible undulations of the artery gave place to more decided elevations. Whenever he removed the refrigerant the alarming symptoms returned immediately, so that after many trials he concluded to leave the ice-bag in place for several days. After that the temperature yielded, the cerebral phenomena disappeared, and the patient was out of danger. He is convinced that she owed her safety to the decisive measure which he had adopted. In another case also he accomplished a result equally remarkable by this means. In conclusion, he remarks that the beneficial effects show themselves in from fifteen to twenty minutes from the beginning of the application, and reach their maximum at the end of an hour. It is true, he says, that they are very evanescent, disappearing rapidly when the application is suspended, but there is no danger in prolonging it as long as the general condition remains precarious. In some cases, under its action, the height of the pulsation has been observed to be tripled, which means a pulse ampler, fuller, and more tense, with the subsidence of dicrotism, intermittence, and irregularity, and with a longer duration of the diastole. An interesting fact noted is that the effects of alcohol and those of atropine on the circulation are in a measure neutralized by the ice-bag. This, says the author, is not astonishing, since alcohol has the property of lowering the blood pressure by paralyzing the vaso-motor nerves, and atropine increases the frequency of the pulse by paralyzing the pneumogastric nerve. This antagonism, he suggests, may possibly be serviceable in some cases of poisoning.

The Treatment of Infantile Convulsions.—In the *Lyon médical* for April 8th we find a *résumé* of an article, by Dr. A. F. Plicque, which appeared in the *Gazette médicale de Paris* for March 24th. Whatever may be the cause of the convulsions, says the author, which may be investigated subsequently, action must be taken at once. It is well to use inhalations of ether as an antispasmodic, since that drug can almost always be obtained without loss of time. The bowels should be emptied if necessary by means of an enema containing salt (a tablespoonful of salt to a glass of warm water). This enema is to be preferred to those of more complicated constitution, because they require more time for their preparation. To keep up the antispasmodic action of the ether, Dr. J. Simon advises an enema consisting of twenty drops of tincture of musk, five grains of chloral, and two ounces of warm water. This is intended for a child from three to six months old. The dose of chloral should be not more than four grains for a child under that age, and may be increased to fifteen grains for a child a year old. The following is a suitable antispasmodic draught: Potassium bromide, fifteen grains; tincture of musk, twenty drops; syrup of ether, a drachm and a half to two drachms; syrup of orange flowers, an ounce; linden water, four ounces. Until the child has passed water abundantly there is danger of further convulsions, and he should be watched closely.

Tonsillar Nephritis.—In the April number of the *Annales des maladies de l'oreille, du larynx, du nez et du pharynx* there is a summary of an article by Dr. A. Thouvenet, published in the *Limousin médical*, in which he relates the case of a woman, forty-five years old, who was suddenly attacked with acute lacunar amygdalitis. In ten days after the beginning of convalescence she had headache, attacks of vertigo, and intense dyspnœa. The *bruit de galop* was observed, the eyelids and the legs were œdematous, and the urine was highly albuminous. After a month of treatment the albuminuria disappeared, and thenceforward the patient remained well. The author is convinced that many cases of nephritis which are ascribed to cold are in reality consequent on attacks of inflammation of the tonsils which have been overlooked, and that sometimes the nephritis occurs after such an interval that the idea of any relation between the two morbid manifestations is lost sight of.

THE NEW YORK MEDICAL JOURNAL, MAY 12, 1894.

Lectures and Addresses.

LECTURES ON THE DIAGNOSIS OF ABDOMINAL TUMORS.

By WILLIAM OSLER, M. D.,
PROFESSOR OF MEDICINE, JOHNS HOPKINS UNIVERSITY.

(*Concluded from page 550.*)

IV. Miscellaneous Tumors.—In this group I shall place seven cases, in two of which the diagnosis was doubtful or could not be definitely made.

(*a*) *A Cyst of the Abdomen of Unknown Origin* (*Mesenteric*).—The following case presents many remarkable features. For more than two years he has had recurring distention of the abdomen, which reaches such a size that he has to be tapped. With the exception of the period of onset, from October to December, 1891, during which he lost about fifty pounds in weight, he has remained in excellent condition, and is inconvenienced only by the bulk of the fluid as it accumulates. He has usually gone to work the day after the tapping. The physical signs are those of a cyst. The dullness is in the front of the abdomen, with resonance in the flanks. He was tapped eight times in 1892, and five times up to date this year. The quantity removed has varied from one gallon to five gallons and a half. At the last two tappings the amount has been only a gallon and a gallon and a half. At first the fluid was dark and bloody, but since the second aspiration it has been a turbid, muddy-looking fluid, alkaline in reaction, containing leucocytes in a condition of disintegration, much granular and molecular *débris*, and very many cholesterin crystals. I regret that no chemical examination was made of the digestive properties of the sample of the fluid which was sent to me. Dr. Miller has reported recently that the patient is in the best of health, and the amount of fluid is gradually diminishing.

Case L. *Cyst of Doubtful Origin.*—November 29, 1892. I saw to-day the following very unusual and remarkable case:

X. F., aged forty-four years. Referred to me by Dr. G. B. Miller, of Philadelphia. Patient is a large-framed, stout man, looking the picture of health.

Family history is good. His personal history is also excellent. He had the usual diseases of childhood; scarlet fever, but not a very severe attack. He has had two attacks of gonorrhœa; has never had syphilis. He has been married ten years; no children. He uses alcohol moderately; has never been a heavy drinker. At times during the past six or eight years he has had "gouty" pains about the joints. In October, 1891, he noticed that he was getting uncomfortably large in the abdomen, and for this he took three bottles of some "reduction remedy," and lost in weight everywhere except in the abdomen, which became progressively enlarged. He then consulted Dr. Loeling, who told him he had fluid in the abdomen. He kept at work, however, until December, feeling weak and having occasional attacks of nausea and vomiting. The distention of the abdomen became so extreme, in spite of active catharsis and diuretics, that, on December 26th, he was tapped and five gallons and a half of a dark, bloody fluid withdrawn. An examination of the abdomen after removal of the fluid failed to reveal any hardness, tenderness, or tumor. The urine at this time was negative. He lost in weight from two hundred and fifty pounds to two hundred and two pounds. After the first tapping he gained in strength, and very quickly went to his business. Gradually, however, throughout January the fluid reaccumulated, and on February 14, 1892, he was again tapped, and three gallons of dark, bloody fluid removed. Without any aggravation of his general condition, and without any special interference with his business, the fluid continued to reaccumulate at intervals, and he was tapped on the following dates: March 25th, five gallons and a quarter; May 5th, five gallons and a half of dark serum; June 12th, one gallon; June 22d, dry tapping, no fluid was obtained; July 9th, twenty-eight pounds; August 12th, three gallons and a half of muddy, turbid fluid; October 4th, twenty-six pounds of turbid, muddy fluid; November 22d, last tapping, three gallons removed. He has felt no inconvenience from the tappings, and has usually resumed work on the following day. The only trouble has been the gradual increase in the size of the abdomen, which causes shortness of breath on exertion and a feeling of tension. He has never at any time had swelling of the feet; the bowels have been regular; the appetite has been lately very good, and, as a rule, with the exception of a short period this summer when he got pale and thin, he has been in very good health and has been able to attend to his work systematically.

Present Condition.—As stated, the patient is a large-framed, powerfully built man, looking the picture of health. The color is good; the venules on the cheeks are somewhat marked; the tongue is clean; the pulse is quiet, 78 a minute; tension moderate; no sclerosis of the arteries.

The abdomen is moderately full, but not larger than is frequently seen in a man of his build. It is symmetrical, not specially prominent in any region. The pulsation of the abdominal aorta is not transmitted to the surface; respiratory movements of the abdomen are natural. There is no special enlargement of the superficial veins. The inguinal glands are not enlarged. On palpation it is everywhere soft and painless. No tumor masses or areas of specially increased resistance are to be felt. On deep palpation below the right costal margin, and during inspiration, the edge of the liver can be touched. Fluctuation can not be obtained.

On percussion the entire front of the abdomen is flat, and only on the deepest percussion in the region of the navel is there flat tympany. The dullness continues into the left flank, but there is a flat tympany high up beneath the tenth and eleventh ribs, and this is continuous in the left hypochondriac and left epigastric areas with the stomach tympany. In the right flank, between the costal margin and the ileum, there is resonance. On turning from side to side, resonance on the left side becomes more extensive, that on the right side not much changed. In the nipple line the liver dullness begins at the lower margin of the sixth rib, and there is no tympanitic note below the costal margin. The flat note extends to the pubes. In the erect posture there is tympany in the epigastric and left hypochondriac regions, and on the left side beneath the lower ribs.

The material removed at the last tapping was turbid, somewhat creamy looking. On microscopical examination it contains numerous leucocytes in a condition of disintegration, larger cells in a state of advanced fatty degeneration, and very numerous cholesterin crystals.

Of course the first thought in this case that suggested itself was that the condition was an anomalous form of ascites, due either to chronic peritonitis or to liver disease. The patient's history, the absence of any trace of jaundice, the retention of general nutrition, and the absence of any evidences on examination of enlargement or contraction of the liver seems definitely to rule out hepatic disease—cirrhosis, perihepatitis, or tumor. Nor did it seem likely that any of the known forms of disease of the peritonæum itself could cause recurring ascites without serious deterioration in the health, tuberculosis, cancer, or those remarkable forms of epithelial papillomata involving chiefly the omentum to which Lawson Tait refers.

On the other hand, the existence at first of a bloody fluid, the filling of the abdomen repeatedly without serious damage to the health, the readiness with which the patient gets up and goes about immediately after the tapping, the physical examination, the presence of cholesterin in the fluid, suggest strongly the existence of cystic disease, either of the omentum or of the pancreas, most probably of the former.

January 26, 1893.—Patient looks in robust health. Abdomen full, but not so much as at former visit. Everywhere soft, but more resistant on the right side; and on deep pressure to the right of and a little above the navel there is an ill defined mass. No definite fluctuation obtained. Percussion is clear in epigastric and upper umbilical region and to the left side shading off toward the middle of Poupart's ligament. Dull in hypogastric, right iliac, right lumbar, and right half of umbilical, and when he turns on the *left side* the dullness persists and the bowel tympany on the left side is exaggerated.

Tapped again April 8, 1893, and only fifteen pounds of fluid removed. He was tapped June 17th, three fourths of a gallon removed; October 1st, a gallon and a half; and November 26th, one gallon removed.

Additional Note, February, 1894.—He had been doing very well, and had been tapped only once since last date. One Friday, during a business trip, he felt very ill on the train, and had a great deal of abdominal pain and vomiting that night. There was no very special distention of the abdomen, but there was a great deal of sensitiveness on palpation. Attempts were made in various ways to move the bowels without any effect. On Saturday he was very much worse, and seemed collapsed and feeble. There were a few small discharges from the bowels, chiefly of blood. There was not very great abdominal distention. He had vomiting and great depression, which increased, and he died on the Sunday evening.

Through the kindness of Dr. Loeling and Dr. Miller I was notified of the post-mortem and was present. The body was that of a large-framed, well-nourished man. The panniculus over the abdomen was at least two inches and a half in thickness. There was no special distention of the abdomen.

Peritonæum: No exudation, serous or fibrinous. In the right iliac and lumbar regions there was a large cyst, the anterior wall of which was adherent in several places to the abdominal wall, and in addition there were several strong bridles of adhesions, one, the longest, from the left side of the cyst to the peritonæum in the neighborhood of the left crest of the ilium. Two groups of fibrous bands passed from the left cornu of the cyst to the abdominal wall, just to the left of the navel. There were also one or two smaller bands of adhesions, and at one point the upper part of the jejunum was closely adherent to the top of the cyst. After freely exposing the peritonæum by a crucial incision the cyst was seen occupying the position already mentioned. In the lumbar region there were several coils of the small intestine which had passed beneath the bands of adhesion, uniting the left cornu of the cyst with the abdominal wall near the navel. There were two different loops through which the coils of intestine had passed; one anterior, through which about eight inches of the jejunum had passed and the intestine was only slightly reddened, whereas through the posterior loop about eighteen inches of the upper part of the ileum had passed and had become strangulated. The coils were of a deep maroon color, swollen and infiltrated, and the attached portion of the mesentery was enormously thickened and also plum-colored. The peritonæum over these strangulated coils was smooth, there was no fibrinous exudate, and they could be withdrawn without any difficulty through the snare.

The intestines were then removed as far as a foot above the ileo-cæcal valve. They presented nothing of note except in the strangulated portion just described. After their removal the position of the cyst could be clearly determined. It was of about the size of a man's head, occupied the right iliac and right lumbar regions, and extended to the left beyond the middle line. It lay directly upon the spine and on the lumbar and iliac muscles on the right side. The hand could be placed beneath it, and it could be lifted readily from its bed. The lower foot of the ileum was closely attached to its left and lower margin; below was the cæcum, and the appendix formed a long, flattened, cord-like structure passing up its posterior wall. The ascending colon lay along its right side. The tumor lay in the mesentery of the last foot or eighteen inches of the ileum, and it was removed very readily by stripping the ascending colon and cæcum from its attachment to the peritonæum. The sac had a grayish-white appearance, except at its left side, where it was stained of a greenish color. There were no other adhesions except those mentioned to the parietal peritonæum and to the jejunum. It was a little roughened and puckered in places. When it was laid open, the fluid was a little turbid and slightly blood-stained.

(*b*) *Multiple Tumor Masses in Abdomen; Phantom Tumor*

Case LI.—Mrs. E., aged fifty-two years, admitted June 8, 1893, complaining of a swelling below the right jaw, pain in the abdomen, and of having vomited blood. There is nothing of note in her family history.

She has had eight children; four are living. She has never been a very strong woman. Fourteen years ago she had a submucous uterine fibroid, which was removed. Twenty-eight years ago she had a severe attack of typhoid fever. In October of 1891 she had diphtheria, which was followed, she says, by a lump at the angle of the right jaw. Shortly after this, too, she began to have occasional pains in the abdomen. In October, 1892, after a period of a good deal of excitement and worry, she had what was called brain fever, and was unconscious for two weeks. She was in bed at this time for nearly three months, partly in consequence of a carbuncle on the back.

She dates her present illness from about February of this year, when she had a great deal of oppression after eating, sometimes nausea, which were unusual symptoms. She also had at times straining at stool and a desire to go very frequently. The dyspeptic symptoms increased, though she never had severe pain. Four weeks ago, after a day or two of much dyspeptic trouble, she had an attack of vomiting after breakfast and brought up a large amount of black, clotted blood. He appetite has been poor, and she has had a great deal of eructation and pain after eating, relieved sometimes by the use o soda. For a week before her admission the right foot began t swell. Within the past six months a tumor mass has develope below the right jaw. Her condition on admission was as follows: Much emaciated; sallow complexion. Attached i front of the angle of the right lower maxilla is a group of enlarged glands, which extend over the jawbone on the cheek The whole mass can be readily moved; the skin is a little rec dened; the individual glands can be felt. The supraclavicular glands are not enlarged. The abdomen looks a little full. The right epigastric vein is much distended with blood; the left vein not quite so large. The current in both is from below upward. In the epigastric region to the left of the navel several nodular masses can be seen beneath the skin. There is no peristalsis visible. On palpation to the left of the navel, there is a solid, somewhat cord-like mass, about six centimetres in length, which extends in an oblique direction toward the axilla. It is very firm and hard, superficial, and feels as if attached to something beneath, as it is only partially movable. No gas is felt bubbling in it. Just above and to the right of the navel is a firm mass which is more difficult to limit and define. Midway between the navel and the ensiform cartilage is a soft, button-like mass which at intervals projects beneath the skin, and then suddenly relaxes with a sizzling sound. In a few moments it appears, hardens into an ovoid, resistant body about three centimetres in lateral extent, and then relaxes again with a sound of gas bubbling in it. The right inguinal region is occupied by a large nodulated mass feeling like a collection of lymph glands. The left inguinal glands are somewhat enlarged. She had no diarrhœa; the stools were liquid, grayish-brown in color. The rectal examination was negative.

The patient remained under observation for two weeks, and no essential change took place in the condition. There was no dilatation of the stomach. The tumor masses above described were very evident.

She left the hospital on June 30th, unimproved.

In many respects no case in the series was more interesting than this one, but a definite conclusion as to the seat of the primary disease did not seem possible. Naturally, with dyspepsia, belching, loss of appetite, and progressive emaciation, one suspected the stomach to be the seat of the malady, the more so with an account of an attack of vomiting in which she brought up a large amount of clotted blood. While under observation in hospital, the condition was not such as to justify putting her to the worry of a test breakfast. Not one of the tumors in the abdomen was apparently connected with the stomach itself, nor were there signs of dilatation. The tumors were rather like masses of enlarged lymph glands. The enlargement of the glands in the right side of the neck dated, she insists, from the diphtheria in October, 1891, but they had enlarged very much since February. The supraclavicular glands were not especially enlarged. Altogether we inclined to the opinion that there was a new growth in the stomach with extensive secondary lymphatic infection. By far the most striking feature in the case was the phantom tumor appearing and disappearing midway between the navel and the ensiform cartilage. Every minute or two it would emerge beneath the skin like a button, get firm and hard, assume an ovoid shape, and then, as one watched it, relax and disappear with a sizzling noise, which could be heard as well as felt. Of course such a tumor is only felt in connection with the tubular muscle of the gastro-intestinal canal, and in this case it was in all probability a limited portion of the coat hypertrophied on the proximal side of a constriction, caused either by a new growth at the attachment of the mesentery, or by some narrowing neoplasm in the wall itself. There was admitted yesterday to the ward a case in which you can study another remarkable phantom muscle tumor. The young man has a well-marked history of ulcer, with vomiting of blood and hyperacidity of the gastric juice. The stomach is somewhat dilated, and in the epigastric region there appears at intervals, readily seen beneath the skin, an ovoid tumor, four to five centimetres in length, which lifts the abdominal wall definitely, and then in a few moments relaxes and disappears. When visible it is very firm and hard, and when relaxed it can only just be felt.

(*c*) *Uterine Fibroids.*—It speaks well for the differentiation of the cases in the hospital that, so far as I know, the following is the only instance of tumor associated with the female pelvic organs which came before me for examination. This, too, was rather by accident. As she had tuberculosis of the lip and tongue, the question was raised whether the abdominal condition was not due also to tuberculosis:

Case LII. *Tuberculosis of the Lip and Cheek; Multiple Tumors in the Abdomen.*—The patient, aged about forty years, was admitted for tuberculosis of the lip, tongue, and cheek. The abdomen was distended, and I was asked to see her to determine the nature of the masses which could be felt. She stated that they had been present for many years, and had never given her any trouble. The characters were very definite. The lumbar, iliac, the greater part of the umbilical, and the entire hypogastric regions were occupied by solid masses, which in the iliac regions presented several rounded movable prominences. The uterus was firmly fixed, and the whole pelvis appeared blocked with the masses. One point only was of interest in connection with the differential diagnosis of tuberculous peritonitis. In the iliac regions palpation was much softer, and the areas of resistance were separated by distinct intervals, and only on deep pressure could solid, uniform masses be felt. On percussion, there was a flat tympany, such as one finds not infrequently when tuberculous tumors are scattered about among the coils of intestines. Here the history, the character of the masses, and the persistence for more than a dozen years were quite sufficient for the diagnosis.

(*d*) *Sarcoma of the Abdominal Wall.*—The following case is uncommon in my experience and is worth placing on record. Not only was there a large, massive, subcutaneous tumor in the lower umbilical and upper hypogastric regions, but there were secondary nodules beneath the skin of the other parts of the body.

Case LIII. *Sarcoma of the Abdominal Wall; Numerous Subcutaneous Metastases.*—Mrs. A., aged fifty-two years. The patient had been a healthy woman, had worked hard, and brought up a large family. For two months previous to my consultation with Dr. Atherton, of Toronto, August 24th, she had suffered with diarrhœa and attacks of dyspepsia. The frequent movements have persisted. There was considerable nausea during last month, and vomiting occurred frequently after eating or drinking. She said she felt full, and could not hold much in the stomach. Within the past two months she had lost flesh rapidly and had become very weak. When first seen by Dr. Atherton, August 9th, the tumor about to be described was present. The examination by him of the pelvic viscera was negative. There was no cancer of the breast.

The patient was a medium-sized woman; looked emaciated, scarcely cachectic; was somewhat pale; tongue furred. Nothing of special moment about the circulatory or respiratory systems. The pulse was a little rapid, but of fair volume, somewhat irregular. Slight cough and some bloody expectoration, which continued until her death.

On exposing the abdomen there was seen a remarkable condition of the abdominal walls. While the portion above the navel looked normal, below this point there was a large mass occupying the lower umbilical, the whole of the hypogastric region, and extending into the inguinal regions. The skin was not discolored and showed the lineæ albicantes.

On superficial inspection it might have been taken for a somewhat unusual localized development of the fatty panniculus. On palpation the mass was felt to be firm, hard, involving the skin (which could not be moved separately), and presented a curious nodular feel, suggestive rather of bunches of lymph glands, or of the sensation given by touching the lobulated kidney of a sheep. With this there was also a feeling of massiveness and solidity, as if the tumor extended through the subcutaneous tissues. The mass sloped, as it were, gradually toward the periphery, and here the nodules were more isolated, and in lines running obliquely toward the false ribs. There were chains of these little nodules, like lymph knots. The whole surface of the body seemed tender and painful on palpation. She complained bitterly of pain after much handling of the mass. There were nodules also beneath the skin of the right breast, one or two in the right thigh, and several in other parts.

Dr. Atherton writes that he saw her for the last time on September 3d, and that she died on September 17th. The daughter states that diarrhœa and vomiting continued, but no blood was passed at any time. For a few days before death "blue lumps," of about the size of a small bean, appeared in various parts of the trunk and extremities, which were tender and painful, like those seen by us.

Whether or not this growth was primary in the abdominal walls is impossible to say in the absence of details which could be furnished by the autopsy alone. She had had gastro-intestinal trouble, but not such as pointed to malignant disease of stomach or bowel.

(*e*) *Tumors of Doubtful Nature.*—In none of the following cases did it seem possible to arrive at a satisfactory diagnosis. The salient points are as follows:

Case LIV. *Dysentery; Two Tumor Masses in Abdomen.*—Samuel T., aged about forty years, seen with Dr. F. R. Smith, November 17, 1892, complaining of a lump in the abdomen and diarrhœa. His general health has been excellent, and his family history is good. He had typhoid fever when nine years of age. Ten years ago he was caught between two cars and injured about the hips and legs. He was laid up at this time for four months and had a dull pain in the right side, which has recurred at intervals, but never prevented him from working. Two months ago he appears to have had an attack of acute dysentery, frequent passages, and swelling of the legs. He was in bed for six weeks. As late as October 17th of this year he passed blood in the stools. He now has no swelling in the legs; appetite is good; bowels regular; and he has gained in weight and looks well, perhaps a little sallow. He has had no fever; tongue is clean. No enlargement of the lymph glands. In the right upper quadrant of the umbilical region, extending into the adjacent hypochondriac and lumbar regions, there is a firm, resistant mass, which reaches to about two centimetres below the level of the navel, and to the right can be felt as far out as the tip of the tenth rib. To the left it does not quite reach to the middle line. On bimanual palpation it is freely movable. It is not well felt below the ribs behind, but on deep pressure it can be pushed forward, and then is distinctly movable. It can be readily separated above from the liver, the edge of which is easily to be felt. In the hypogastric region, just above the pubes, and to the right of the middle line, there is a second tumor, feeling about the size of an orange, somewhat elongated. To the right it appears to have a definite ridge-like edge. The percussion is everywhere resonant, and a clear note is elicited over both tumors, except for a short space to the right of the middle line over the one in the hypogastric region. Neither spleen nor liver dullness is increased. There is no dilatation of the stomach. The urine is clear and he has passed no blood, and there is no albumin; no tube casts.

The patient was seen again January 10th. General condition has been excellent, and he has been at work. There is no cachexia. The tumor masses previously noted were present with great distinctness. The lower one appeared to be scarcely so large as on previous examination. In the left inguinal region, about three centimetres from Poupart's ligament, there is a freely movable, subcutaneous nodular body about the size of a bean. The inguinal glands are not enlarged.

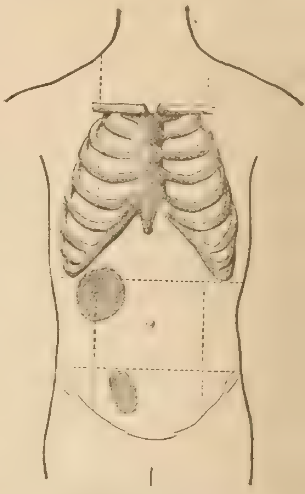


Fig. 37.—Situation of the tumors in Case LIV.

It did not seem possible to arrive at any conclusion as to the nature of these tumors. The strongest possibility seemed to be of their connection with the intestine, as he had had tenesmus, diarrhœa, and melæna, but the patient's excellent general condition and rapid improvement would seem to contraindicate new growth.

While preparing this lecture for the press this patient was seen (December 20th). His condition remains excellent and he has been steadily at work. The lower tumor is no longer palpable; the upper is still quite distinct, though smaller than at date of former note. Its position is unchanged.

The following case I regarded at first as tumor of the stomach, but on subsequent examination it seems to be extremely doubtful whether it is really in this organ:

Case LV. *Tumor Mass in the Epigastrium of Doubtful Nature.*—Kate H., aged forty-one years, admitted August 29, 1893, complaining of pain in the left side and swelling in the epigastrium. There is nothing of moment in the family history. She has been healthy with the exception of typhoid fever at twenty-one and pleurisy last winter. She has had at times irregular cramps in the abdomen. For several years she has had dyspepsia, suffering with belching after eating and slight discomfort. Ten months ago she had an attack of severe pain in the epigastrium, with nausea and vomiting, and was in bed for a week. In the next two months she had four similar attacks, which lasted about a week. Some of these attacks, the doctor said, were due to gallstones. About two months ago she first noticed the swelling in the abdomen which is now present. She does not think it has increased in size. She never has been jaundiced; bowels are regular; passes a normal quantity of urine. Her chief complaint is of a dull pain below the left costal margin. She is a fairly well-nourished woman; lips and mucous membranes are pale; tongue is coated. The abdomen is distended, chiefly in the epigastrium and in the right hypochondriac region, in which there is a smooth prominence. On palpation this corresponds to a rounded, hardened, somewhat nodular tumor, which in the middle line feels quite smooth and on the right side is more irregular. In the nipple line there is a marked ridge to be felt midway between the costal margin and the transverse navel line. The liver dullness begins at the sixth rib and continues directly into this prominent tumor mass. At first it was thought that this represented an enlarged liver, but on September 2d, on palpation, gurgling sounds were noted "in the prominent tumor in the epigastrium, and to-day it is everywhere resonant. The gurgling can be felt in this solid mass with the greatest distinctness. The tympany reaches as high as the base of the ensiform cartilage." Ewald's test breakfast showed the presence of free hydrochloric acid. This case interested us extremely from the remarkable simulation of the outline of the tumor mass to that of an enlarged liver.

On September 5th the following note was made: "There is a very distinct prominence below the costal margin in right epigastric and right hypochondriac regions. On palpation, a firm, resistant mass fills the upper zone of the abdomen, the outline of which resembles quite accurately that of an enlarged liver. Beyond the left parasternal line no very distinct edge is to be felt, but toward the right, as she draws a deep breath, there is a distinct nodular edge. The entire mass descends with inspiration. The resonance is not so extensive to day; it does not reach beyond the right parasternal line. After inflation the stomach tympany extends two fingers' breadth below the navel, and there is in the left epigastric and the left upper quadrant of the umbilical region the outline of a dilated stomach."

When resonance was first noticed in the mass below the ensiform cartilage we thought that possibly extensive infiltration of the stomach wall existed; but the patient has been under observation on several occasions since, and she has gained in weight, looks well, free hydrochloric acid is present in the gastric juice, and after inflation the resonance is not more tympanitic, and the stomach outlines seem somewhat below the mass. Altogether there was doubt enough to exclude the case from the stomach list, and I place it here among the miscellaneous tumors of doubtful nature.

(*f*) *Aneurysm of the Aorta.*—And lastly, not the least interesting of the miscellaneous tumors was a large sacculated aneurysm of the abdominal aorta.

Case LVI.—Lee K., aged sixty-seven years, admitted July 5th, complaining of a "fluttering lump" in the abdomen. With the exception of scurvy and rheumatism during the civil war he has been a very healthy man. He is temperate and denies venereal disease, but there is a distinct cicatrix just beyond the glans penis.

Present Illness.—For three years he has noticed a lump in the abdomen, which for the past two years has been painful, and which he says has lately increased in size. He has a dull, steady, gnawing pain in the tumor itself, and more or less pain in the back. The pain and throbbing sometimes nauseate him, particularly after eating, and he has vomited twice in the past two weeks. Bowels are constipated; he has severe headaches, and has had occasional bleeding from the nose. He is short of breath on exertion. Patient is a very vigorous, healthy looking man; well built; well nourished; musculature above the average. The conjunctivæ are a little watery and yellow; pupils are equal. Pulse regular, equal in both radials; the arteries thickened; can be rolled under the finger; pulse wave can not be obliterated. The brachial arteries are tortuous. The examination of the lungs is negative. The apex beat of the heart is seen in the fifth interspace, just outside the nipple line; it is forcible and well defined. The sounds are clear; the first a little thudding, and both somewhat accentuated at the base.

Abdomen.—In the epigastric and upper part of the umbilical regions there is an irregularly rounded prominence, which pulsates forcibly and almost synchronously with the heart impulse. It has a transverse diameter of 8·5 centimetres; vertical nearly eight centimetres. It is perhaps a little more prominent to the right than to the left of the middle line, and on the right side almost obliterates the groove below the right costal margin. On palpation it feels smooth, yields to firm pressure, expands forcibly and in all directions. There is at times a distinct systolic thrill. The borders are everywhere rounded and it seems to dip down rather sharply just above the umbilicus. The tumor is not influenced by the knee-elbow position. The whole mass can be grasped in the hand and the expansion in that way very readily felt. It is unusually mobile laterally. It can be moved to the right, so that its left border is at the middle line. It can not be moved to the left quite so far, but far enough so that it pulsates under the left costal margin. The up and down movements are very slight: it is not influenced by respiration. There is dullness on light percussion over the top of the mass, and in a circle the diameter of which would be five centimetres. Beyond this there is tympany on all sides. On auscultation there is a loud systolic bruit heard everywhere over the tumor. There is no definite diastolic shock. The condition of the liver, spleen, and other parts of the abdomen is negative. The diagnosis of aneurysm of the abdominal aorta was made by Dr. Hewetson, under whose care the patient first came, and subsequently, when I saw him, the doubt arose in my mind, owing to the extreme mobility, whether it was really in the aorta, or whether it might not be connected with one of the branches—the tumor seemed remarkably mobile, and could be pushed so far from left to right. Dr. Halsted, too, thought that the tumor might possibly be in one of the branches; and as the patient consented he did an exploratory operation. The tumor was found to spring directly from the aorta just above the renal arteries. The pedicle of the sac was short and almost as wide as the aneurysm itself. It was thought better to leave the case to Nature than to attempt any measures to promote consolidation in the sac. The patient recovered rapidly from the operation and left the hospital in about ten days.

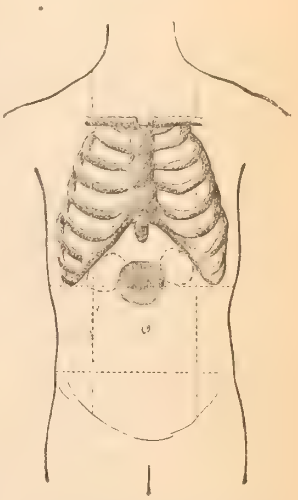


Fig. 38.—Position of the aneurysm. The dotted outlines illustrate the extreme mobility. Case LVI.

Aneurysm of the abdominal aorta is rare. This is the first one which has been under our observation since the hospital was opened, during which time there have been between forty and fifty aneurysms of the thoracic aorta in the wards. The diagnosis here was readily made; the tumor was so pronounced, so rotund, so expansile in all directions, and with a well-marked thrill and systolic bruit—no single feature of aneurysm was absent. The mobility alone was unusual; not one of the few aneurysms in this situation which I have seen presented such remarkable mobility.

A few weeks subsequently I saw in Montreal with Dr. Shepherd a patient who had progressive anæmia and debility with great abdominal distention and pain. An abdominal tumor had been suspected, but the tympany and distention of the stomach and bowels prevented any satisfactory examination. She became more anæmic and died the day after I saw her. Through the kindness of Dr. Wyatt Johnston, I saw the specimen, which proved to be a large aneurysm of the abdominal aorta which had compressed the duodenum, causing great dilatation of the stomach. It had ruptured at one edge and hæmorrhage had taken place into the retroperitoneal tissues.

Original Communications.

PROLONGED, NON-OBSTRUCTED
LABOR IN THE FIRST STAGE;
ITS MANAGEMENT.*

By J. C. EDGAR, M.D.

It is with considerable diffidence that the writer appears before this society to read a paper upon the above topic, because he fears he has little that is really new upon the subject to offer to those especially interested in midwifery, or to the general practitioner. But it is because the successful management of a protracted first stage sometimes becomes such a difficult problem of midwifery practice that this subject for a short paper has been selected.

If the paper does nothing more than call forth a discussion that will enable us more clearly to appreciate the difficulties and the best means at our command for meeting and overcoming them, time will not have been lost.

Starting out with the understanding that we are to limit ourselves only to a consideration of delayed labor in the first stage as due solely to an absence, irregularity, or insufficiency of the expelling powers, the question that immediately confronts us at the outset is, "What do we mean by delayed labor?" What limits shall we set, the exceeding of which shall determine the transforming of a normal into an abnormal or delayed parturition. Normal labor may be defined as one in which the expelling powers are sufficient of themselves and without artificial aid to deliver a living fœtus, the vertex presenting without undue exhaustion to either mother or child.

On the other hand, a given labor may be said to have exceeded the bounds of the normal condition and to have become delayed whenever, during any stage and in the presence or in the absence of expulsive efforts of the voluntary and involuntary forces, a considerable period of time elapses without marked progress being made, or when signs of exhaustion appear in mother or fœtus.† The amount of time that may thus elapse with safety to mother and fœtus is a varying quantity, a personal equation, depending upon many factors—as the strength of the individuals concerned, the stage of labor during which the delay takes place, and the conditions present.

The accepted clinical guide of impending or present exhaustion and danger in both fœtus and mother is to be found in variations in the heart of each. In the fœtus the danger signal is furnished by increasing frequency and irregularity of the fœtal heart-beats, and this constitutes a reliable guide. In the mother an increasing pulse-rate, with or without a rise in temperature, and commencing alterations in the regularity of the uterine contractions, which may or may not be accompanied by nervous phenomena—as excitement, irritability, and so on—indicate trouble. One of the older writers upon obstetrics states that when delay occurs during the first stage "neither mother nor child is ever in danger (except in hæmorrhage or convulsions) on account of the labor.* This was the teaching of thirty years ago—namely, that prolongation of the first stage is of no importance, provided the membranes be unruptured, the sufferings of the patient counting for little.

Another of the older writers (Churchill) states that labor is not tedious until twenty-four hours have passed, and, no matter how long the delay, interference is unjustifiable in the absence of a positive indication. We have, on the one hand, the teaching that "meddlesome midwifery is bad," that no interference is justifiable in the absence of a positive indication; and, on the other, that "delayed labor is bad," and that much subsequent damage may result to mother and fœtus if a lingering labor be allowed to continue, even when we are unable to clearly discern the accepted danger signals of impending exhaustion. It certainly may be stated without fear of contradiction that experience lessens the tendency to interfere during the progress of the first stage, and that it is "characteristic of over-anxiety to be always thinking it necessary to hasten the progress of dilatation" (Cullingworth).

On the other hand, it often becomes a grave question whether the general "wear and tear of a labor lasting more than twenty-four hours is not of itself a serious thing," and whether we are justified in "waiting with folded hands doing nothing until symptoms of mischief have actually arisen." †

It has recently been well said that it is the "bounden duty of the practitioner to avail himself of every means in his power to insure his patient an easy and short labor, with as little suffering as possible, provided only he is satisfied that the means he adopts are such as are not in themselves likely to prove injurious." ‡

I may state here that in the great majority of delayed labors in the first stage there is no real obstruction in the cervix. It may be stated, moreover, that in almost every instance the cervix will dilate readily enough, provided only there be sufficient strength to the expelling powers. From this we conclude, then, that the first principle of treatment is to find out the cause of inefficient uterine action and remove it. And often the cause is to be found in a distended bladder or rectum, or in excessive pain; and, as a spasmodically acting uterus is the chief cause of non-dilatation of the cervix, hence it is that relaxing drugs—such as chloral, gelsemium, and ether—are so often demanded. For convenience' sake, means destined for accelerating the first stage of labor may be divided into—

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* Read before the Society of the Alumni of Bellevue Hospital, March 7, 1894.

† Reynolds.

* Meadows.

† Playfair. *Brit. Med. Jour.*, p. 715, Sept. 30, 1890.

‡ Playfair. *Loc. cit.*

(*a*) *Those means that we make use of and apply outside of the parturient canal, and*

(*b*) *Those that we make use of within the passages.*

As a rule the remedies should be made use of in the order named, the latter class being avoided if possible.

(*a*) *Means for Accelerating the First Stage of Labor that are applied without the Passages.*—The simpler means should not be neglected. A tedious labor is often made to take on quite another aspect when the strength of the woman is improved by judicious feeding and stimulation, and securing for her two hours of rest or sleep.

As is well known also, encouraging the patient to be upon her feet and walk about at this time will strengthen the contractions when feeble, and especially after the rupture of the membranes will cause suspended contractions to set in again by the reflex stimulus of the presenting part upon the lower uterine segment and ring of the cervix.

With the squatting posture of the parturient and the use of Ahlfeld's birth-stool I have made no personal observations. A distended bladder will interfere with the proper contraction of the uterus by reason of its close anatomical relation, and a distended rectum as well may by reflex influences result in irregular and arrhythmical uterine contractions.

A valuable stimulant of labor pains is heat externally applied. A full hot bath or sitz-bath, or alternate hot and cold applications over the hypogastrium or sacral regions, are of great value. Perhaps no drug is oftener used as an oxytocic than quinine, although its action appears to be more of a stimulant to arouse the nervous system than a direct exciter of uterine action. Ergot as recommended by a few in the first stage we reject as unscientific and dangerous. Its use before the expulsion of the placenta is now absolutely forbidden in most of the large maternities of the world.

Since Playfair, in 1874, directed the attention of the profession to the use of chloral hydrate in the first stage it has come into almost general use. It gives most satisfactory results in very painful and cramp-like and irregular contractions with functional rigidity of the cervix, especially in primiparæ. Tincture of gelsemium in five to ten minim doses every twenty minutes has in our experience not given the same satisfactory results as chloral, although acting in somewhat the same manner. Antipyrine in fifteen-grain doses in irregular uterine action is greatly valued by some, but I have been unable to determine that it has any advantages over chloral. The same may be said of cocaine in two-grain suppositories or in twenty-per-cent. solution to the cervix.

Opium is of great value in diminishing uterine irritability. Although it stops preliminary pains and premature contractions, yet its secondary effect is to aid labor, as the recurring pains are strengthened, and the rest obtained to the parturient is of advantage.

It is generally advised that chloroform should be avoided in the first stage, and never used to the degree of narcosis. Its disadvantage rests in the fact that in sufficient quantity it temporarily arrests the contractions altogether. It is too strong and not sufficiently prolonged for this stage. The same objections do not apply to ether and the A. C. E. mixture.

In instances in which the severe pain and cramp-like action of the contractions appear to interfere with the progress of cervical dilatation we have found that pouring a small quantity of ether into an Allis inhaler and allowing the patient to inhale it, controls the suffering quite as well as chloroform does, and there is much less danger of inertia uteri being produced.

Manual frictions of the fundus uteri and expressio fœtus, although undoubtedly valuable methods in prolongation of the second stage, still have not been of much utility in the first stage until the cervical ring is more than one half dilated.

Manual frictions should be rotary in character, and timed with the commencing hardening of the uterus

Bearing down efforts on the part of the parturient are not generally considered to play any important part in the physiology of the stage of dilatation, still the increase of intra-abdominal pressure produced by voluntary efforts of the woman can in many instances be utilized to advantage. This is especially true after the partial dilatation of a soft cervix in multiparæ, the membranes having ruptured.

Many parturients under the above conditions, before the head enters the cervix or vagina and reflex stimulus causes a vigorous use of the voluntary muscles, diaphragm, abdominal walls, and pelvic floor, have no incentive to bear down and must be taught. They can to advantage be encouraged to do so, and when so instructed by the attendant, prolongation of the latter part of the first stage can in many instances be overcome, and the use of more complicated internal means for hastening labor avoided.

In electricity we possess one of the surest means for producing in a sluggish uterus, or in one the seat of inertia, strong, rhythmical contractions of the uterus. By its use we are enabled more closely to imitate Nature's method than by any other we know of.

In vertex presentations, the positive pole may be placed over the sacro-lumbar region, and the negative over the abdomen, care being taken to avoid the child's head. Another, but in my experience not so efficient a method, is to place sponge electrodes upon each lateral wall of the uterus.

In breech presentations, to avoid the fœtal head, the regions selected may be the patient's lumbo-sacral region and the nape of her neck. The lumbar electrode can conveniently be made of a copper plate, and held in place by a belt or roller bandage; and for the abdominal, absorbent cotton, a sponge, or the hand of the operator.

Aside from the danger of increasing an already tetanic condition of the uterine muscular fibers, we believe we have seen asphyxia produced by setting up intra uterine or intravaginal attempts at respiration on the part of the fœtus, and thus clogging the air passages with mucus and other foreign bodies. The remedy is not without its dangers.

Strychnine as a remedy preparatory to labor in the past few years has received considerable attention.* It is especially applicable in multiparæ who in previous confinements have experienced prolonged and tedious labors, feeble and irregular uterine contrations, faulty contraction and retraction of the uterus, post-partum hæmorrhage, and severe after-pains. It is of especial service in women the subjects of general debility and want of tone in the voluntary muscles. A sixtieth of a grain of sulphate of strychnine is to be given three times daily, commencing four or even eight weeks prior to labor. If well borne the dose is in the last week to be increased to a thirtieth of a grain or even a fifteenth of a grain.

From observations in a number of selected cases in hospital practice, not only during pregnancy, but during labor and the puerperium, I find strychnine of real value. The plan pursued is to take all the multiparous waiting women in a hospital service and select therefrom all who have had abnormal previous labors due to feeble, irregular, or faulty uterine contractions, post-partum hæmorrhage, or severe after-pains, and those who have required the use of the forceps in conditions other than obstruction. These are all given a sixtieth of a grain of strychnine three times daily during the latter part of pregnancy until a week before the expected date of confinement, when the dose is increased to a thirtieth of a grain if well borne, and in some instances to a fifteenth of a grain.

In primiparæ suffering from tedious labor the hypodermic use of strychnine is employed. A sixtieth of a grain is given every fifteen minutes until a twentieth of a grain has been administered.

No ergot follows labor and a sixtieth of a grain of strychnine is given instead. The results so far are most satisfactory, and it certainly appears that we have in strychnine at least a valuable preventive measure for prolonged labor in the first stage.

(*b*) *Means for Shortening the First Stage of Labor that are used within the Passages.*—In having recourse to these means for hastening labor we presuppose that the simple external means for strengthening inefficient uterine contractions have failed, or that threatening exhaustion on the part of mother or child demands some prompter measure.

We moreover determine that no mechanical cause for delay exists, this fact being ascertained by a careful internal examination.

Among the simpler remedies for exciting the uterus to action and at the same time assisting in the softening of the cervix is the prolonged hot vaginal douche directed against the lower uterine segment. The douche is especially valuable in instances where, the os being only partially dilated, the lower uterine segment is forced down into the pelvis, and the walls of the segment become incarcerated between the head and the bony pelvis, thus causing an inflamed and œdematous condition of the os.

If the internal examination reveals uterine contractions that are spasmodic, irregular, and cramp-like, that even when the os is partially dilated the occurrence of a pain results in little if any protrusion of the bag of waters, then is it well to make sure that the membranes are separated from the uterine wall for a distance of at least two inches within the ring of the cervix. If adhesions exist here the clinical picture of the labor is often completely altered by their separation. To accomplish this many English writers advise the use of the gum-elastic catheter with a stilet. The little operation can more quickly, satisfactory, and with less danger of premature rupture of the membranes be performed with the finger introduced to the extent of two joints and swept around within the ring of the os.

In multiparæ the half hand can be introduced into the vagina to advantage. In primiparæ it will often be necessary to push the fundus backward, at the same time depressing it, and then, hooking the index finger into the cervix, the latter is drawn forward and downward and the separation accomplished. Whether separation of adhesions that interfere with dilatation is accomplished or not we do not know. Trenholme, of Montreal, first pointed out the clinical fact.

Artificial rupture of the membranes we only resort to in exceptional instances, such as hydramnios, for example.

No mechanical cause for delay existing, we have in direct internal uterine irritation a valuable means for increasing the expelling powers. Until recently this was mainly accomplished by the passage of one or more catheters or bougies, or the balloon catheter of Tarnier, between the membranes and uterine wall, and there allowed to remain. The method is too uncertain to demand further attention, as it is well known that it often fails absolutely or is too slow to be of value. The injection of from one to four ounces of sterilized glycerin high up between the membranes and uterus is a means which rarely fails to set up strong uterine action within an hour or two, provided the membranes be intact and the catheter can be inserted at least six inches.

One of the best-known means for the mechanical dilatation of the cervix, and at the same time exciting the uterus to contract, is the Barnes bag. We believe it to be one of the most valuable means at command if time be not wanting. Its action is self evident. It acts at the same time as a uterine exciter and a cervical dilator. Within the last two or three years substitutes for the Barnes bag have not been wanting. Some few years ago the Champetier bag for the induction of labor, and at the same time the dilatation of the cervix, was introduced to the notice of obstetricians.

At the twenty-sixth annual meeting of the British Medical Association, Dr. Ernest Herman and Dr. Herbert Spencer read papers stating their experience with this bag for the induction of labor. Folded up, it is by means of a pair of forceps introduced into the uterus empty, then partly filled with water, the forceps then being disarticulated and removed one blade at a time. The bag, as we see, is in the shape of an inverted cone, the apex lying in the internal os. A tube continuous with the apex has let into it a stopcock. The material used in its construction is non-elastic waterproof silk, so that a definite amount of water may be injected into it and no more. Its capacity is seventeen ounces, and the diameter of the base is three inches and a half. Consequently the os must be fully dilated for it to pass out into the vagina. The advantages of this bag over Barnes's, according to the English writers just quoted, are briefly as follows:

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* R. Bell (*Brit. Med. Jour.*, p. 715, 1890) has recommended it highly.

1. But one operation is necessary, as but one size of bag is used.

2. Barnes's bag being elastic, no clear indication exists when it is pumped full. It also alters its shape according to the rigidity of the cervix.

Champentier's bag being inelastic, the reverse obtains.

3. Complete dilatation is claimed to be impossible with Barnes's bag. The Champentier dilates fully.

4. Both bags may displace the presenting part (vertex to shoulder, for instance), but with the Champentier this is claimed to constitute a less serious accident, for the bag acts as an efficient plug to retain the liquor amnii, and when once full dilatation is secured and the fœtus can be at once turned and extracted.

Acceleration of dilatation can be accomplished by traction upon the Champentier bag. In forty cases reported by Pinard, in which the Champentier bag was employed, in twenty-three dilatation was complete in from six to ten hours; in seven, from twelve to twenty-four hours; and in ten, from twenty-four to forty-eight hours. When completely filled the bag can be compressed to a transverse diameter of three inches; with two ounces of fluid removed it can be compressed to two inches and a half. Removing four ounces renders the bag shapeless.

It may be stated, on the other hand, that a good many accidents have already been caused by this type of dilator. In numerous reported instances the shoulder has been substituted for the vertex.

The writer reported such a case * a year ago. Here the Champentier bag was used to accelerate a tedious labor, the vertex presenting and the head firmly engaged in the pelvis.

A modification of the Champentier bag has within a year been introduced. Although of about the same diameter at the base (three inches and a half), yet it is shallower, holds less water, and an arrangement of tapes permit of an indentation being produced in the base to contain the fœtal head. Although so extensively used, as both of these bags now are in France and England, still we can not but look upon their action as unscientific and in many instances unnecessarily dangerous. We can not agree with those who state that even where displacement of the vertex into one or other iliac fossa, or even into the fundus uteri, does occur, such displacement is but a step toward one of the recognized methods of accomplishing delivery with the greatest prospect of success to mother and child—viz., by turning—and thus unintentionally aids the operator in his manipulations.

In the great majority of prolonged labors, by a careful study of the case and the application of other means more scientific, the use of hydrostatic dilators, including Barnes's, may be dispensed with.

In 1892 the appearance of an extract from the fifth edition of the *Text-book of Obstetrics for Midwives*, by Professor E. Credé and G. Leopold, and which appeared soon afterward in this country, called forth considerable criticism. The following sentence especially has been taken exception to: "It is nothing less than criminal to try to assist in the stage of dilatation by attempting to stretch the cervix with the fingers and to push back the anterior lip of the cervix." No doubt this may be good conservative teaching as directed to midwives, but few if any obstetricians in this country would consider it anything but criminal to permit the anterior lip of the cervix to remain for any time between the head and pubes, and many of us would prefer the digital dilatation of the cervix in the first stage to the exclusion of such dilators as have originated from the French school of midwifery.

In suitable cases surely no harm can result to the lying-in woman if the aseptic hand is carefully used to assist dilatation of the os. Gentle manual dilatation is especially applicable in cases where the os is partially dilated, soft, and pushed low down in the pelvis.

To-day, in the face of sudden danger to either mother or child, we have two means whereby at any point in the first stage we may terminate the entire labor in thirty minutes or less. One is the deep cervical incisions of Dührssen, and the other the combination of operative procedures known under the general term of *accouchement forcé.*

Skutsch as late as 1887 recommended multiple incision of the cervix. The results of the operation are such as to cause the method to be almost entirely abandoned.

In late years Dührssen has proposed, not multiple, but four incisions of the undilated cervix, so made that when completed the os is wholly dilated, and the passage of the fœtus causes no further extension of the cuts. Dührssen has operated in this way upon thirty-five women. All the women recovered and only two children were lost. The operations were performed principally for eclampsia.

Accouchement forcé originally meant forcible delivery through an undilated or undilatable os. To-day we usually understand the term as covering three operations—(1) manual or instrumental dilatation of the cervix, (2) version, and (3) immediate extraction of the child—and thirty minutes is ample time to accomplish all three, provided that when we commence the operation the portio vaginalis has already been drawn up into the body of the uterus.

The American Medical Editors' Association will hold its annual meeting at the Palace Hotel, San Francisco, on Monday evening, June 4th, under the presidency of Dr. C. H. Hughes, of St. Louis. A banquet will be tendered to the association by Mr. R. E. Queen, of San Francisco.

The Sims Statue for Bryant Park.—It is announced that the bronze statue of the late Dr. J. Marion Sims designed to be set up in Bryant Park has been completed. It is of heroic size and is said to be an admirable likeness.

An International Congress of Ophthalmology is to be held in Edinburgh on the 7th, 8th, 9th, and 10th of August.

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* *New York Jour. of Gyn. and Obstet.*, April, 1893.

BRIGHT'S DISEASE OF THE KIDNEYS,

WITH SPECIAL REFERENCE TO ALBUMINURIA AND URÆMIA, SO CALLED, INCLUDING PUERPERAL CONVULSIONS.*

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THE subject to which I respectfully invite your attention this evening is somewhat comprehensive, and in order to introduce certain points for discussion you will pardon me for going over some ground so familiar to all.

Dr. Richard Bright, of Guy's Hospital, London, in 1827 first observed that albuminuria and dropsy were dependent upon renal disease, and since that time various renal affections have been grouped together under the name of Bright's disease of the kidneys. Various classifications have been made from time to time by different authors; but for the purpose of bringing out discussion on the subject before us, it will suffice to say that the disease may be acute or subacute and chronic. All forms appear to be of an inflammatory nature at the outset, whatever pathological changes may result ultimately, unless it be that form known as waxy (lardaceous, amyloid) degeneration. Both organs are usually affected, though one part of a kidney may be attacked differently from another.

Acute and subacute Bright's disease may be considered together as of the same nature. The latter most frequently results from the former, though in some cases the disease may be subacute in its course from the first—the difference depending a good deal on the condition of the patient at the time of the onset of the attack. In both forms the glomerules and tubules of the kidneys appear to be chiefly affected. Hence in these forms, dropsy and uræmic phenomena, as we shall see, are usually prominent symptoms.

Acute Bright's disease of the kidneys has a variety of other names, such as acute tubular or tubal nephritis, desquamative nephritis, parenchymatous nephritis, catarrhal, croupous, and diffuse nephritis, inflammatory dropsy, and the like. By others again it is termed glomerulo-nephritis.

In all cases there is perhaps a certain amount of predisposition, but whatever this may consist in, exposure to cold and wet are frequently exciting causes. Of toxic agents that bring about the disease when taken internally may be mentioned copaiba, turpentine, cantharides, the mineral acids, phosphorus, arsenic, lead, mercury, and nitrate of silver. Regarding alcohol, it is doubtful if the toxic action directly causes nephritis, but rather exposure incident to the intoxicated state, as the author has observed in several cases. Sometimes, as is well known, acute glomerulonephritis follows scarlet fever in children. It also occurs as a complication in diphtheria, epidemic cholera, measles, typhoid and typhus fevers, erysipelas, small-pox, and acute infectious diseases in general. It is observed sometimes in the course of pulmonary tuberculosis, articular rheumatism, gout, relapsing fever, acute lobar pneumonia, pyæmia, septicæmia, endocarditis, dysentery, carbuncles, and suppurative processes. In one case observed by the author at Bellevue Hospital many years ago, the disease was attributed by the late Dr. Austin Flint to extensive burns. In the chronic form of tubular nephritis severe chronic malarial poisoning undoubtedly gives rise to it.

What bearing has pregnancy on this disease? It probably acts more as an exciting cause where the predisposition already exists. According to Bartholow it occurs not oftener than once in a hundred and fifty times, but particularly in primiparæ and twin pregnancies. From personal observation the author is convinced it occurs much more frequently in twin pregnancies among primiparæ than others, and also among those who have become illegitimately pregnant and endeavor to conceal their condition by tight lacing and the like, thus greatly increasing the pressure on the kidneys and interfering with the renal circulation.

The disease occurs at all ages and among both sexes. But children and those under middle life are more subject to it, and young men are more frequently affected with it than women. And although a certain predisposition, consisting chiefly in general bad health, perhaps exists in all, yet it occurs sometimes among those who are apparently robust.

Brief reference to symptoms is necessary. Of these, pain in the back is regarded as very important by the laity; but in the author's experience never yet has he observed a case of Bright's disease of the kidneys that gave rise to pain. There may be a vague sense of tenderness on firm pressure in the back, but more than this such pain usually has no reference whatever to the kidneys, but it is simply lumbago to a greater or less degree.

In acute tubular nephritis *dropsy* is usually the first sign that causes the patient to seek medical advice. But before this is observed the patient, on close questioning, will probably admit that there have been certain uræmic symptoms, so called, such as headache, drowsiness, insomnia, nausea, and even vomiting, paroxysmal attacks of dyspnœa or asthma, temporary disturbance of vision, and the like. This subject will be more thoroughly referred to presently.

The dropsy is due to several causes, and at first sight appears to be very easily explained. Chief among the causes of dropsy is imperfect renal function, on account of which there is diminished excretion of water, with corresponding increase of pressure in the capillaries. This does not account for it wholly, however, since dropsy does not necessarily follow ligation of the renal vessels with total suppression of urine. But, according to Cohnheim, there must also be present increased permeability of the walls of the vessels which allows the transudation of serum. What causes increased permeability of the walls of the blood-vessels early in the disease does not appear to be exactly known, but it is evident that later on such permeability is markedly increased by the loss of albumin and the anæmic condition. Should mitral disease supervene, as is often the case, that would also account in a measure for dropsy. This may be confined to a slight puffiness of the face, or the lower limbs may become much swollen and pit on pressure, especially over the tibia. In some cases the skin is distended almost to bursting, the lower limbs become so heavy as to interfere with walking, and the features so changed that even parents can not identify their own children.

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* Read before the Society of the Alumni of Bellevue Hospital, February 7, 1894. For the discussion, see page 438.

The *urine* is scant and high-colored, being sometimes also smoky or even bloody. The normal quantity of urine passed in twenty-four hours is from forty-five to fifty ounces. But in these cases it may be reduced to half that amount, or a few ounces, or be even suppressed temporarily. The specific gravity varies, being sometimes normal, but it may be higher. According to Roberts, it may rise to 1·030 or even 1·065 without the presence of sugar. There are usually casts, and the urine is heavily loaded with albumin.

The presence of albumin in the urine is accounted for in various ways by different authors. Thus, according to some, it is due to its transudation through the walls of the renal capillaries from increased pressure. If rupture occurs, blood will also be found. After structural changes have taken place, the albuminuria will continue. In the author's opinion, Cohnheim's theory appears to be the correct one. According to that author, the albuminuria is due to changes in the epithelium of the glomeruli. As long as this epithelium is intact it supports the walls of the vessels of the glomeruli, thus rendering them impermeable and preventing escape of albumin. But in this disease the epithelia covering these vessels, or rather lining the capsule, undergo degeneration from inflammatory process, thus allowing the vessels to become dilated and permeable, with corresponding albuminuria. This becomes chronic should the structural change be not repaired. Albumin in the urine is not a sufficient sign by itself of Bright's disease of the kidneys, for it occurs transiently and in moderate quantity in connection with other conditions. Thus we find it sometimes in the course of dyspepsia and accompanying the *grippe* and many other diseases. It is also found in the urine of soldiers after exhausting marches, in that of athletes, etc. In these cases the albuminuria is probably due to nervous depression attended with temporary vaso-motor paralysis and dilatation of the renal capillaries. Diseases of the genito-urinary tract are also likely to give rise to the presence of a small amount of albumin in the urine, on account of the pus and blood that are likely to be passed, and great care should always be had in differentiating the disease.

Regarding tests for albumin, the ordinary heat and nitric-acid test and Heller's test are usually sufficient. One word of caution, however, is necessary, and that is, the urine should always be slightly acid in reaction, otherwise these tests for albumin fail.

Having briefly referred to the dropsy and albuminuria, *uræmic symptoms* now engage our attention. Besides those already referred to, such as drowsiness, headache, insomnia, nausea and vomiting, paroxysmal attacks of dyspnœa, temporary disturbance of vision, and the like, there may be convulsions and even coma. The explanation of these uræmic symptoms is a matter of dispute; in fact, the name itself is misleading if strictly interpreted. Probably the most commonly accepted theory is that they are due to urea retained in the blood. Frerichs believed that the urea became converted into the carbonate of ammonium by decomposition from the action of a ferment in the blood. This theory, as is now well known, has been disproved by authors. Oppler, Zalesky, and others, on the other hand, maintain that all so-called uræmic phenomena, including convulsions, are due to retention in the blood of various extractive material, especially creatin and creatinin. It is quite likely, however, that imperfect elimination of all the extractives, on account of impaired renal function, giving rise to a vitiated condition of the blood in general, is the true explanation. So much for the *chemical* theory of uræmic symptoms. Of the supporters of the *mechanical* theory, Traube perhaps stands first. He considers that the so-called uræmic symptoms depend upon cerebral anæmia and pressure due to œdema. And it is worthy of note that uræmic phenomena are certainly more marked in proportion as dropsy is a prominent symptom. Other causes, including even cerebral lesions, have been brought forward and advocated by different authors.

Of late years, however, investigators have been looking more and more to disturbances of the circulation as the immediate cause of these symptoms. Just what such disturbances really are is not exactly known. But it is quite certain that in such cases, with uræmic symptoms, there is increased arterial tension. This condition, with or without marked anæmia and œdema, culminates on a single occasion or repeatedly, as may happen, and is doubtless due to the vitiated condition of the blood, which also gives rise to varying abnormal sensibility of nerve centers. According to the degree of arterial tension and increased sensibility of nerve centers, as brought about by the vitiated condition of the blood, or what is generally understood to be the uræmic state, so do we have uræmic symptoms so called, such as have been already referred to. To sum up, then, we believe these phenomena are due to three factors: (1) Vitiated condition of the blood, (2) increased sensibility of nerve centers, and (3) increased arterial tension. It will be well to refer to these again when we come to the immediate treatment of convulsions and uræmic symptoms in general.

The *diagnosis* of acute tubular nephritis is usually not difficult, resting chiefly on the presence of albumin and casts in the urine. So far as heart disease is concerned, in tubular nephritis, whether in the acute or chronic form, it is, perhaps, most frequently secondary, being some valvular lesion resulting from an endocarditis. For it is in this form of nephritis that there is a tendency to inflammation of serous membranes in general. In the chronic interstitial nephritis, on the other hand, hypertrophy of the left ventricle independent of valvular lesion occurs, and as to whether it is primary or secondary is still a subject for dispute among some.

The *prognosis* of acute tubular nephritis is nearly always favorable, especially if the patient be young and is seen early. Among the aged, however, there is little hope of recovery. The longer the albuminuria continues the more unfavorable the prognosis, and recovery can not be said to be complete until all signs of albumin have disappeared from the urine. Heredity is bad.

In acute cases of albuminuria, in the so-called *kidney of pregnancy* as it occurs among primiparæ who are otherwise healthy, the prognosis is also good under skillful obstetrical management.

In the treatment of these cases I have never had any positively good results from counter-irritation over the loins, either in the form of cups or hot applications, except in the case of young children. I believe that in the nephritis following scarlet fever in children, for instance, the application of hot poultices to the loins does good. They are easily applied, and certainly afford relief and comfort to the patient when made large enough and kept dry, so as not to wet the bedclothes and undergarments. Cups, on the other hand, are disagreeable as well as difficult of application.

The kidneys being already congested, it seems to me that at first diuretics are contraindicated. On the other hand, if we get the bowels and skin to act vicariously we relieve the kidneys of their extra burden, and in this way help to avert the lesser and often serious uræmic symptoms. The chief reliance is to be placed on hydragogue cathartics. Of these one of the surest and best is the *pulvis purgans*, or *compound jalap powder*. It may be given in drachm doses and repeated without materially weakening the patient until the marked dropsy is lessened. Other hydragogues are recommended, and of these perhaps Clutterbuck's elaterium is the best. The author remembers that it was a favorite remedy with the late Dr. Austin Flint. But one very serious objection to this drug is its uncertainty, and valuable time may be lost while waiting for its effect.

In addition to hydragogue cathartics, diaphoresis would naturally appear to be indicated, but I would prefer the hot-air bath or other mechanical means rather than drugs for this purpose. In fact, this would be sufficiently accomplished, in most cases, by keeping the patient in bed or a warm room for a few days or a week. But in mild cases, or with patients who are already in a debilitated condition when attacked, catharsis and diaphoresis may be combined in Fothergill's pills, which I have often found to be invaluable (℞ Calomel, pulv. digitalis, pulv. scillæ rad., āā gr. vj. Ft. pil. no. vj. Sig.: One every three hours until purging takes place). It is well to begin about noon to give these pills, so that, should necessity arise, a saline cathartic can be given early next morning to avoid any bad effect of mercury.

During the past few years I have been in the habit of giving large doses of the tinctura ferri chloridi, twenty drops in water every three hours. According to Roberts, iron acts well in these cases and hastens the disappearance of albumin from the urine. He, however, states that when begun too early it is apt to bring on a return of the acute symptoms. The author has never observed any such effect. Just how iron acts is not exactly known, but it perhaps aids in preventing deterioration of the blood as well as being curative to the inflammatory process in the renal tubules.

So far as diuretics are concerned, they are contraindicated at first, as already stated. Not until the bowels have been thoroughly moved and renal congestion somewhat relieved, as evidenced by increased flow and more healthy condition of the urine, should diuretics be administered. Then they are of great benefit in washing out tubules that have become obstructed with epithelial *débris*. The best diuretic I have ever tried is the acetate of potassium and fresh infusion of digitalis (℞ pulv. potass. acetat., ℥ ss.; infusi digitalis, ℥ vj. M. Sig.: Tablespoonful four times daily). After a week or more small doses of iron and some bitter tonic may be all that is required.

The diet should consist largely of milk or some of its preparations. In some cases I have treated these patients with perfect success while the diet was exclusively buttermilk.

For mild uræmic symptoms, such as dyspnœa, palpitation, headache, nausea, insomnia, and the like, a few drops of Magendie's solution is generally all that is needed, if given hypodermically. In the chronic interstitial form glonoin (nitroglycerin) acts well in relieving the headache by dilating the fibrosed arterioles.

But should uræmic symptoms become urgent, and convulsions be threatened or actually occur, what shall be done? Let us again bear in mind the factors that are necessary for the occurrence of these convulsions. They are: (1) Vitiated condition of the blood, (2) increased blood pressure, and (3) abnormally increased sensibility of nerve centers. We see at once that immediate treatment would rationally be directed to diminishing blood pressure and excitability of nerve centers, both of which can be quickly done, whereas the vitiated condition of the blood requires much time and attention to be altered appreciably.

In other words, the blood is to be improved gradually by the somewhat tedious process of repair, brought about by increased healthy nutrition, rather than corrected by the supposed sudden elimination of a poison. But it is certain that this latter notion has taken a very deep hold on the medical profession. Hence the routine treatment of drastic cathartics, diaphoresis, and diuresis, not to mention bloodletting. Even these severe means require time, so that the patient may succumb to repeated convulsions before the desired result has been accomplished. Moreover, such drastic measures may do harm by weakening and annoying the patient without doing the least good, unless it be occasionally in very acute cases.

Bloodletting is mentioned first as a means of averting danger in uræmic poisoning, as it is perhaps the oldest. It is still practiced by some, but it should be confined to sthenic and acute cases, if indeed it be practiced at all. But be it remembered that it is not by eliminating a poison that bloodletting acts in these cases, but by diminishing blood pressure. Its effects are quickly felt and, being directed to factor No. 2 in a sure and certain way, it breaks one link in the uræmic chain, so to speak, and to that extent it is a speedy and sure means. But, inasmuch as we possess a remedy that will produce an equivalent effect without loss of blood which may be much needed later on, why bleed at all?

Chloroform is mentioned next in order, and is, perhaps, more generally used now in these cases than anything else.

It acts by blunting nerve centers and so is directed against factor No. 3. There is no doubt chloroform will arrest convulsions, and is thus indicated in the immediate treatment of uræmic poisoning. But chloroform is a dangerous drug, and, moreover, the convulsions often return as soon as the chloroform is withdrawn. In two cases that I now have in mind I sat up all night with the patients, one in Bellevue Hospital and the other in the country, in Connecticut. In both the convulsions returned as soon as they partly came out of the influence of the drug, and they both died. My belief then and now is that too much chloroform hastened their death, or was partly to blame for it. One word about ether. I have myself observed such alarming symptoms brought on by giving ether, even in the eclampsia of pregnancy so called, and gynæcologists in this city give such fatal results from its administration in renal diseases, that I am disposed to let it severely alone—and my earnest advice to others is to do the same thing. Among children, chloral administered by the rectum is said to act well. I have had no experience with it and do not even know the dose, but should be disposed to limit it to two grains and repeat in two hours if necessary.

Opium has been recommended by high authority, as is well known, with or without bloodletting. Like chloroform, it blunts nerve centers, thus rendering them less responsive to the irritation of disturbing elements, while in proper doses it does not fatally depress the heart. Moreover, its effects are more lasting than those of chloroform. For these reasons, as Loomis justly observes, it is preferable to chloroform, both being directed to factor No. 3. But opium alone meets only the indication relating to irritability of nerve centers. To reduce blood pressure at the same time, which can readily be done, it should be combined with bloodletting or some means equivalent. In chronic cases, however, where the blood is thin and poor, the patient feeble, and there is no hope of recovery, as well as for the lesser uræmic symptoms, opium, judiciously used, has no equal in the experience of the author.

A word as to *pilocarpine*. This drug has been, and still is, used in these cases, but not so much for its effect on the circulation as with the old idea of eliminating a poison through the skin, owing to its great diaphoretic properties. But it is an exceedingly dangerous cardiac depressant, besides causing strangulation of the patient sometimes, owing to the greatly increased flow of tough saliva. It is very improbable that pilocarpine eliminates poison sufficiently in a few minutes to ward off convulsions. It probably acts, in such cases, by lowering arterial tension, if, indeed, it is beneficial at all. In general treatment, however, or during the interval, so to speak, pilocarpine in small doses acts well by stimulating the functions of the skin.

In a limited number of cases I have given pilocarpine and morphine in combination, hypodermically. A grain of hydrochloride of pilocarpine is dissolved in eighty minims of Magendie's solution of morphine, of which ten minims are injected. The morphine holds the heart up to its work, while the pilocarpine prevents over blood pressure, besides causing profuse diaphoresis.

In the autumn of 1883 I first gave morphine and pilocarpine combined in solution. The case was that of a boy, perhaps twelve years of age, suffering with a severe attack of bilious remittent fever, and was seen with me by Dr. H. Koplik. In spite of large doses of quinine the temperature rose to 105° F., the urine became almost suppressed, bloody, and highly albuminous, and the patient comatose. Within an hour after the hypodermic injection of the mixture the boy became conscious, perspiration was profuse, and the case went steadily on to recovery. In this particular case, diaphoresis was perhaps more indicated than lowering of arterial tension, but I quote it to show how successfully morphine and pilocarpine combined in solution may be given in those cases.

Veratrum viride is the remedy to which allusion was made when speaking of its taking the place of bloodletting. Here we have a remedy that acts like bloodletting, but without loss of blood. In other words, it diminishes arterial tension but does not eliminate a poison.

It appears that Clark, of Oswego, this State, first used veratrum viride in large doses in these cases, but he gave it by the mouth. Just here let me say that when symptoms are urgent the hypodermic method is the only trustworthy one, when effects are needed without delay and with certainty. Hence the great advantage, as was first observed by Dr. W. H. Johnston, of Birmingham, Ala., of giving this remedy hypodermically. Now we are all aware of the prejudice existing against the use of veratrum viride in large doses, and especially hypodermically. Given alone it is undoubtedly a dangerous remedy, nearly as much so as pilocarpine, perhaps. But in conjunction with opium it appears to be perfectly safe and certainly very efficacious, as I have satisfied myself by personal experience. Only Norwood's tincture should be used. Just why Norwood's tincture should be better than any other tincture or preparation of veratrum viride I do not know, but it is the incontestable fact. The plan is to give the usual dose of morphine (♏ v—x of Magendie's solution) hypodermically, and with the same instrument, as soon as it can be filled, from five to ten minims of the tincture of veratrum viride. That is the same as ten to twenty *drops* of the tincture. Brandy or whisky should be at hand in case of cardiac depression, but I have never observed any alarming case of it. Not only do convulsions cease, but they do not recur for some time. During the interval, as a prophylactic measure, veratrum in moderate doses by the mouth acts well. Even in epilepsy the bromides act very much better, in my experience, when combined with veratrum. It is the opinion of the author that, after three years' experience, the conjoined opium and veratrum hypodermic method is the correct treatment of the severe forms of so-called uræmia—at least the best yet discovered.

Should we have to deal with uræmic coma, perhaps hydragogue catharsis and diaphoresis by well-known methods is our sole means at hand. Thus, in the case of a patient at Bellevue Hospital many years ago, I gave him, by order of Dr. Flint, two grains of Clutterbuck's elaterin. He was about thirty-five years old, and was made to swallow by manipulating the larynx. But it may be administered by means of a tube. I have tried to give elaterin hypodermically, but, being a resinous substance, it appears to be impossible. The remedy in the above-mentioned case proved to be successful, and the patient left the hospital afterward much improved, though not cured. After a complete cure of acute tubular nephritis, the patient should take care for a long time not to bring on a relapse by acts of imprudence, such as intemperance and, above all, exposure to cold.

Should uræmic symptoms occur during pregnancy, the same immediate treatment is indicated, for the so-called eclampsia of the pregnant woman is perhaps identical with the so-called uræmic convulsions. They both yield to the opium and veratrum treatment. But, in the case of pregnancy, the question of bringing on labor is to be considered.

Chronic Bright's disease of the kidneys may be one of three typical forms, according to the renal anatomical elements involved: (1) Tubules, (2) interstitial tissue, and (3) the blood-vessels. Of course, there may be mixed cases in which all these elements named may become involved.

1. Chronic tubular nephritis may be chronic in form when first observed, and in some of these cases I have reason to believe that there is latent tuberculosis and even hereditary predisposition. I have known, even among the wealthy, several members of a family to have chronic tubular nephritis, while others, or their children, would suffer with pulmonary tuberculosis, scrofula, and the like. In others it follows one or more acute attacks, especially among those who have bad hygienic surroundings, or are in a condition of marked lowered vitality. The kidney is large, smooth, and white, the changes occurring chiefly in the cortical portion. It affects both sexes at all ages. The uræmic symptoms and dropsy are more prominent than in other chronic forms. The urine is generally scanty and high-colored, being also loaded with albumin. Casts of various kinds are also observed. Inflammation of serous membranes is more likely to occur in this form than in the other; and dyspnœa, besides being uræmic and paroxysmal, may be due to œdema of the lungs. Cardiac complications are more likely to result from valvular lesions following endocarditis than simple hypertrophy of the left ventricle.

2. Chronic interstitial nephritis gives rise usually to the small, red, contracted or cirrhotic kidney. This is due chiefly to shrinkage of the cortical portion and tissues between the pyramids. The disease is invariably chronic, and is generally met with in men rather than women, and those at middle life or past. Gout, rheumatism, syphilis, intemperance, and lead poisoning are given as causes of this disease, but often the ætiology is obscure. The urine is abundant, of a low specific gravity, and often contains but little albumin. The casts are usually granular or hyaline. Simple hypertrophy of the left ventricle, with marked accentuation of the second sound in the aortic interspace, is generally observed. By some this hypertrophy is thought to be due to resistance in the renal circulation, but it is more probably caused by general fibrosis of the arterioles throughout the body. Apoplexy of the retina and even of the brain is likely to occur in this form for obvious reasons.

3. Lastly, there may be waxy (lardaceous, amyloid) degeneration of the kidney. This condition is generally secondary to some pre-existing wasting disease, as caries of bone, phthisis, syphilis, and the like. The *materies morbi* is carried to the kidneys by the arteries, so that the afferent vessels of the glomerule become affected first. Subsequently the whole Malpighian corpuscle becomes involved. Tubular nephritis generally supervenes if the patient lives a sufficient length of time. The treatment of these cases is chiefly symptomatic. In general, however, severe measures are not indicated, as they may be in acute tubular nephritis. For that reason I prefer Fothergill's pills to drastic hydragogue cathartics. In chronic interstitial nephritis the headache is often best relieved by glonoin, as already stated. A liberal diet of milk, or some of its preparations, is frequently beneficial. In a case treated by me at the Polyclinic Hospital recently the albumin entirely disappeared from the urine under a milk diet alone, though the patient had suffered with chronic albuminuria for several years. The invalid should remove, if possible, to a warm, dry climate. Of the three forms of chronic Bright's disease, tubular nephritis offers the most hopeful prognosis. But recovery is rare, and the disease is apt to return on the least provocation, even after the patient is thought to have been cured.

31 West Thirty-third Street.

RUPTURES OF THE MEMBRANA TYMPANI.*

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Rupture of the membrana tympani is by no means a rare occurrence, all the aural surgeons in this section of the College of Physicians no doubt having had some experience with this accident, and myself having had recently a case of it in my private practice, so I have thought a few remarks on this subject would be of interest to the members of the section in otology.

Rupture of the membrana tympani presents such sudden and marked symptoms at its occurrence as to call the attention of the patient to his ear and to excite his fear and apprehension. Many cases are reported in medical literature, and quite a number have presented themselves to my notice during past years, mostly some time after the occurrence of the accident and for the purpose of obtaining a critical opinion as to the amount of damage sustained by the ear for the purpose of obtaining a pension from the United States, or to discover the probability of the patient obtaining success in a suit at law for damages.

Causes.—The peculiar position of the membrana tympani, a very thin fibrous membrane, exposed to sudden changes of pressure both on its inner and outer surface, as well as its position almost on the outer surface of the body, causing it to be easily injured either by design, accident, or meddlesome interference, is the reason for our cases of rupture. The common causes in my own experience have been the rarefaction or condensation of air on either the inner or outer surface, or the entrance of objects into the external auditory meatus, or extension of fractures of the petrous bone. Several cases have presented themselves to my notice many years after their occurrence due to sudden concussion of the air in one ear while the patient was exposed with the ear near the mouth of a large cannon which had been exploded rather suddenly, and which he had just loaded; again I had infantry soldiers, whose regiment was supporting a battery of field pieces, and who were compelled to lie down in front of the cannon and allow them to be fired over their prostrate bodies. These patients both gave histories of sudden rupture of the membrana tympani and presented ears with more or less damage to hearing for the purpose of securing pensions. I have also seen a case where the patient had been a marine diver, who went down to the bottom of deep water to help build a foundation of a bridge. I could not say in his case that the membrana tympani had been ruptured, but there was some loss of hearing. Again the case which called forth these remarks was a rupture of the membrana tympani caused by either rarefaction or condensation of air, produced by the patient's blowing his nose rather forcibly in efforts to clean some sticky scabs out of it (cleansing the same side as the ear affected), as he was suffering from a mild chronic ozæna. Several cases have been seen which were caused by sudden blows of the fist or open hand over the opening of the external auditory meatus, either in sport or in fighting in earnest. The old-fashioned habit of nurses and school teachers of boxing the ears of unruly children as a punishment has been the rather frequent cause of rupture of the membrana tympani, but happily this has been done away with. Under this cause comes the frequency of rupture of the membrana tympani in hanging, whether judicial or suicidal, its occurrence being reported in almost every case. It also has occurred in severe spells of vomiting, in sneezing, and in whooping-cough, but in these latter cases Roosa thinks there must have been some attendant catarrh of the tympanum as its indirect cause. Perhaps almost every aurist has caused rupture of the membrana tympani himself while suddenly and rather forcibly inflating a chronically diseased ear with a Politzer's bag; but in these cases there must have been some chalky or fatty change in the membrana tympani to cause it to rupture so easily.

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* Read before the Section in Otology and Laryngology of the College of Physicians of Philadelphia.

Almost any body of proper size to pass down the external auditory meatus to the membrana tympani can cause its rupture in the hands of some meddlesome person or a surgeon unskilled in handling instruments. A woman may be scratching an itching meatus—a very bad habit by the way—with a hairpin, when she herself, or some one striking her elbow, will cause a rupture. I have seen a case where a young farmer fell while crossing a wheat-stubble field, when a stalk of the stiff stubble caused a severe rupture of the membrana tympani by entering his ear when his head struck the ground. Roosa mentions a case of a young man getting a straw in his ear while ascending a ladder, and thus rupturing his membrana tympani. Picking ears with tooth-picks, or by young scholars with sharp lead pencils, are reported as causes of this accident. Politzer mentions its having been caused by a careless use of a syringe with a long, sharp nozzle, and in efforts to extract foreign bodies. Receiving a wave in the ear in sea-bathing we see in Philadelphia as a rather frequent cause of rupture.

Fractures of the petrous portion of the temporal bone sometimes extend into the membrana tympani and thus rupture it. In fact, the hæmorrhage accompanying this accident and running out of the external auditory meatus is the acknowledged sign of fracture of the skull in the neighborhood of the tympanum. One such case fell under my own notice many years ago. A train in which I was traveling struck a young girl, about ten years old, who had been walking on the railroad track, and tossed her body to one side. As this passed my car window and excited my curiosity, when the train stopped I went back with the crowd to see what damage had been caused, when I saw the dead body lying beside the track with a moderate hæmorrhage coming out of one ear. I diagnosticated fracture of the base of the skull running to the petrous portion of the temporal bone.

A case of rupture of the membrana tympani from a fracture of the bone of the skull was lately reported to the Ophthalmological Section of the College of Physicians. The young man was shown who had received a blow on the side of his head by getting it caught between projecting timbers from one car and the car in front. Here there was a hæmorrhage from the external auditory meatus, and ruptures were seen. In these cases, if there is much hæmorrhage, it comes from the diploe of the bone and not from the membrana tympani.

The diagnosis is not difficult if the ear is seen within a week or so of the accident, but there is generally so little scar left that it is almost impossible to tell it after any length of time, as the aurist is often asked to do. If the case is seen immediately after the accident a slight hæmorrhage occurs in or from the external auditory meatus and a ragged linear laceration is discovered in the membrana tympani with its edges covered with clotted blood. It does not remain long of linear shape, but soon is dragged by the radiating fibers of the membrana tympani into a round or lozenge-shaped opening. I have usually discovered in looking at these rather recent cases nothing but an intensely congested membrana tympani with an irregular-shaped clot of blood sticking fast to the membrana tympani, which was Nature's way of closing and sealing the opening.

The position of the rupture may be in any portion of the membrana tympani, but it is most frequently seen in the anterior lower fourth near the situation of the cone of light; next most frequently in the posterior lower quarter, and then parallel to the handle of the malleus, either anterior or posterior to it. In my case where a man ruptured his membrana tympani while blowing his nose the rupture was linear in shape, anterior to the handle of the malleus, and somewhat in a parallel direction to it. Julius Veit, of Munich (*Med. Abhandl.*, 1892), cites forty-three ruptures seen among six thousand five hundred aural cases (0·66 per cent.). Four of these, produced by penetrating bodies, had two in the anterior inferior quarter, one in the anterior superior quarter, one in the middle line below center. Seven were from extension of fractures of the bones of the skull and from concussions, thirty-two were from sudden rarefaction of air in the external meatus, twenty-seven of these from blows to the ear, four by detonations, one by a blow during bathing. Of these thirty-two of rarefaction, the rupture was in the anterior half in twenty-three cases, four superiorly, eleven inferiorly, and five in the posterior half.

Politzer says: "I have more frequently seen ruptures in front of the handle of the malleus than in the posterior half of the membrana tympani," and quotes Zaufal as performing seven experiments on the cadaver and producing rupture in the anterior half six times. He agrees with Zaufal's experience that an obliquely placed membrana tympani causes the instrument to slide forward on to the anterior portions.

The *prognosis* is usually very favorable, unless the rupture is accompanied by concussion of the internal ear, or by suppuration of the membrana tympani and middle ear, by myringitis, or by fracture of bones. Politzer says: "In most cases disturbances of hearing caused by traumatic ruptures disappear completely, so that the function becomes normal again."

Schwartze, in his *Pathology of the Ear*, page 90, says: "Simple ruptures, without deeper injury of the ear, usually heal in healthy individuals and under proper care in from a few days to a few weeks, sometimes leaving a cicatrix and sometimes not." In my case, where rupture was caused by blowing the nose, hearing came up from hard contact to about watch one foot, the hearing in the other ear being about three feet, and the rupture healed up in a week. I have usually given a favorable prognosis to sufferers from rupture of the membrana tympani due to a slap over the ear, and dissuaded them from entering legal proceedings against their friend or enemy. As to the applicants for pensions, it is impossible to declare that the loss of hearing is due to a rupture of the membrana tympani; but it is safe to swear that there is loss of hearing at present existing, which may have been caused by rupture of the membrana tympani, accompanied with concussion of the labyrinth.

Of course, if a suppuration of the middle ear has been set up, the prognosis is graver, and the prognosis is grave in ruptures from fractures of the bones of the skull.

Symptoms.—The patient comes to you with a history of a sudden loud report in the ear, accompanied by a sharp, severe, piercing pain. Fainting, staggering gait, giddiness, and severe loud tinnitus soon set in, giving the patient more or less of a shock and impressing his mind with the fact that something serious has happened to him. There is great loss of hearing in the affected ear, which may not hear the watch even on hard pressure, or the tuning fork aerially or by contact. In a few hours these symptoms gradually subside, leaving an uncomfortable feeling, almost painful, in the ear, and more or less tinnitus; my last patient also had some autophony for several days. Tinnitus and distress may continue for a week or so. Ruptures caused by clean bodies and in healthy ears do not usually have long-continued symptoms; but, unfortunately, few such bodies are aseptic, and they are therefore apt to set up suppuration. All aurists know how difficult it is to keep open an incision made in the membrana tympani by clean, sharp instruments; as Nature is so quick and determined in healing these up, they have to be burned with the electro-cautery; so the rupture is soon filled and covered over with a clot of blood, under which the rupture soon heals, myringitis goes down, and hearing begins to return, while the blood clot either falls off or is carried off to the periphery with the growth of the membrana tympani, and so out to the wall of the external auditory meatus. An irregular scar remains for some time where the rupture was, and gradually disappears. In unfavorable cases the laceration remains patulous, the middle ear becomes infected with germs, and a severe and prolonged suppuration sets in, which may even end in the mastoid.

Treatment.—The surgeon had better be an observer of Nature's process of healing in the average case of rupture of the membrana tympani and not be too meddlesome. In fact, an expectant plan of treatment will in most cases be the best; certainly in the early stage of healing it is the best, until you are sure suppuration has been set up or severe myringitis has come on. Some surgeons syringe the ear with warm water, but I consider this bad practice unless pus is present. My own habit is to keep clean cotton in the orifice of the external auditory meatus, to keep the ear warm and prevent the entrance of dust and germs from the air; to use some counter-irritant back of the auricle—say, compound tincture of iodine—partly as a placebo until the proper time for more active treatment arrives, and partly as a revulsive; to give purges by the mouth and nervous sedatives, especially potassium bromide, hoping to lessen the tinnitus. Then, after a few days, when healing has gone on, inflation with Politzer's bag always improves the hearing, lessens tinnitus, and removes autophony. My own case was immediately improved by the first inflation. I should advise no efforts being made to remove the clotted scab, as it had better be left to the care of Nature, even for weeks. The use of soft and sloppy food is of benefit in the early stage, as the motion of the jaw and the anterior wall of the external auditory meatus serves to excite pain. Occasionally a leech or two on the tragus is needed to subdue severe inflammation.

251 South Thirteenth Street.

A CASE OF
SARCOMA OF THE CILIARY BODY AND CHORIOID.

CLINICAL HISTORY AND OPERATION.

By DAVID WEBSTER, M. D., etc.

PATHOLOGICAL EXAMINATION AND REMARKS.

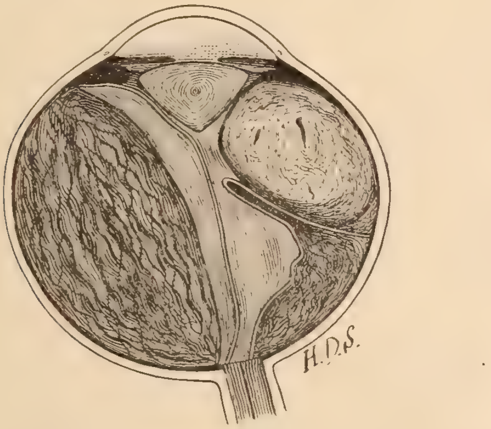
By H. DAVISON SCHWARZSCHILD, M. D., etc.

Clinical History.—Helen H., aged ten years, was admitted to the Manhattan Eye and Ear Hospital, September 20, 1893. Her vision was at that time, R. E., $\frac{20}{15}$—; L. E., perception of light only. She gave a history of a blow with a bottle over the left orbit about a year previously. This did not give her any trouble at the time. Her attention was not called to anything wrong with her eye until she went to the country in July, 1893. Her parents then noticed that there was something wrong with the left eye, but as she did not complain of any pain in the eye it gave them no concern. They brought her to the hospital because they saw a spot on the eye. They were surprised when told that she could not see out of that eye. The family history is good, none of her relations so far as is known ever having suffered from malignant disease. Upon examination, a tumor was found occupying the nasal side of the vitreous chamber. It seemed to spring from the ciliary body and chorioid. Posteriorly it extended far back toward the optic disk. Anteriorly it pressed the nasal portion of the iris forward. The iris at its nasal periphery was so thin by this pressure that it was in parts almost entirely absorbed. The tumor was of a dark color generally, with darker striæ running along its surface. There was also detachment of the retina contiguous to the tumor.

After consulting with my colleagues, and obtaining the consent of those responsible for the child, I enucleated the eyeball with the assistance of Dr. Schwarzschild, to whom I am indebted for the pathological examination.

The patient was discharged after remaining in the hospital three days. She was under observation for several weeks thereafter, and up to the time she was last seen there was no return of the growth.

Pathological Examination.—The eye was placed in Müller's fluid; it remained there six weeks and was then removed. I subsequently made a frozen horizontal section to bisect the tumor. This could be distinctly felt as a bulging mass through the sclera, which was intact.



Macroscopically.—The growth is ovoid in shape, measuring eight millimetres in its short and twelve millimetres in its long diameter. The latter intersects the optical axis at an angle of fifty degrees. The mass is of firm consistence, grayish in color and moderately mottled. It lies in apposition anteriorly with the ciliary body and contiguous portion of the iris to the distance of two millimetres and a half; externally is bounded by the chorioid, having therefore a curve similar to that of the sclera, and internally it abuts against the retina. The lens is triangularly compressed through pressure. The retina is detached partly by the new growth, but principally by the fluid occupying the vitreous chamber. The aqueous has a gelatinous appearance; the anterior chamber is of normal depth.

Microscopically.—The tumor consists of a fibrillar basement substance, blood-vessels, large round cells in vast numbers, and but few spindle cells. Neither variety is arranged in alveoli. There is a moderate amount of pigment visible throughout the growth. Glioma cells are not present. The tumor arises from the ciliary body and anterior five eighths of the chorioid, and is bounded internally by the retinal pigment layer, which is adherent to the mass but separated from the retina. The diagnosis is therefore that of a lightly pigmented, large round-celled sarcoma of the corpus ciliare and chorioid. The form of tumor described, as a rule, possesses greater consistence and is less malignant than the small-celled variety. The retina over a small area is normal; this corresponds to that portion which in the recent state was adherent but became detached post mortem. Over the greater surface, however, it is thickened. The membrana limitans interna is in parts separated; when present it is distorted. The layer of nerve fibers, ganglion cells, and the finely granular (molecular) layers are replaced by connective tissue. Blood-vessels are noticeably absent and the supporting tissue is hypertrophic. The rods and cones are swollen and changed in shape. Those portions of the detached membrane which lie in apposition are held together by a loose connective-tissue formation which, being infiltrated by exudation, presents at first glance the appearance of multiple cysts. The fluid contained in the cavity of the globe and anterior chamber is albuminoid in character and devoid of fibrin and cells. The chorioid is the seat of an exudative inflammation. The nerve is unchanged. The iris is atrophic throughout, particularly so, however, at its origin in the vicinity of the sarcoma. The ciliary body in its entirety presents evidences of a pre-existing mild serous cyclitis; the cornea and sclera are normal.

The feature of interest in this case is the occurrence of a sarcoma in a child at the early age of eleven. The intra-ocular malignant neoplasm to be expected at any time from the period of birth to the fifth and exceptionally to the twelfth year is the glioma, a retinal growth. Contrarily disposed, however, is the sarcoma, which occurs in adults commonly between the ages of forty and sixty, and, as an ætiological factor thereto, a history of traumatism is usually obtainable. This is exemplified in the case under consideration. In glioma, however, although there is no exciting cause apparent, it is nevertheless evident that a certain congenital morbid predisposition constitutes an underlying element in its genesis. The susceptibility of children to the development of sarcoma of the uvea is remarkably slight, since, even after the reception of severe injuries, we are compelled to recognize the extreme rarity of its occurrence. Glioma and sarcoma occur in the eye as primary tumors; they spread to neighboring structures through continuity *via* the paths of least resistance—*i. e.*, the preformed passages. Metastatically they develop in organs in different parts of the body; conversely, malignant tumors in remote regions have been observed as rarities developing in the chorioid through metastasis. In all cases of intra-ocular neoplasm of malignant nature enucleation should be performed at once, as it is only by prompt surgical interference that the spread of the growth may be arrested. Small sarcomata of the iris, it is true, have been removed by iridectomy; but, as isolated neoplastic cells which have invaded adjacent structures are not removed thereby, the growth recurs. Substitutive operations for enucleation in similar cases, such as evisceration with or without the insertion of an artificial vitreous, are to be condemned, firstly, on account of their inefficacy, and secondly, as sympathetic ophthalmia may be induced thereby. After the growth has perforated the globe and the orbital tissues have been involved, in addition to enucleation, exenteration of the orbit becomes necessary.

The prognosis of intra-ocular malignant neoplasm is dependent upon the early removal of the eye.

THE
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Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, MAY 12, 1894.

THE OPIUM HABIT.

DR. PATRICK HEHIR, a surgeon-captain in the Bengal Army and lecturer on medicine and pathology in the Hyderabad Medical School, has made a report, dated February 13, 1894, to the Royal Opium Commission, of England. Dr. Hehir appears to have had great opportunities of observing the effects of the habitual use of opium, and, if we may judge from his report, either the evils of habitual addiction to opium have been overdrawn, or Indian opium is much more inoffensive than the drug with which American and European physicians are familiar, or the Indian constitution is remarkably tolerant of its action, or, finally, the author of the report is singularly mistaken.

Dr. Hehir states that he has filled a number of offices in India during the past twenty years and has had many opportunities of observing the use of opium under almost every conceivable circumstance, but most of his experience has been gained in his capacity as a private practitioner of medicine. The habit of opium-eating is very prevalent in Hyderabad; Dr. Hehir estimates that twelve per cent. of the Mohammedans, seven per cent. of the Hindus, and five per cent. of the Pariahs and other classes are addicted to it; in round numbers, there are, he thinks, 1,400,000 opium-eaters in a population of about 11,000,000. The average amount of opium consumed by each devotee of the habit is about eight grains a day, half in the morning and half in the evening. In some families opium is given to all the children, even to those who are only a month old, while in others it is given only to those of the children that have shown a predisposition to intestinal ailments, general weakness, or susceptibility to fever, cold, or some other infirmity. Among the laboring classes it is given to the infants to keep them quiet while their mothers are out at work.

The general conclusions which Dr. Hehir draws from his observations and from his own experience, for he has been an opium-eater himself, are that opium used in moderation enables a person to do more work on less food and with less sleep in a given length of time than he would be able to do without it; that it endows him for the time being with an unwonted cheerfulness and disposition to work; that it never produces any organic disease whatever, its chief ill effect being constipation; that it calms the irritated mind, allays the ruffled feelings, re-establishes the mental equilibrium when it has been destroyed, conquers resentment, is opposed to impulsive action of any kind, and keeps emotional displays within bounds; that instead of shortening life it increases its duration; and that instead of increasing the mortality it diminishes the death-rate.

The beneficial effect of opium in cases of diabetes is well known. Dr. Hehir says that he has known a diabetic to take two hundred grains a day for seven years, and yet be none the worse for the habit. The man was emaciated, but, says the author, it would have been phenomenal had he not been, for he was losing eleven ounces of glucose daily. Indian opium is said to be characterized by its poverty in morphine, by containing a large proportion of an antiperiodic principle, and by its richness in those unknown constituents which give rise to the pleasurable sensations experienced by the opium-eater. Indian opium is always pure; at least it is never sophisticated fraudulently. It is obvious that we can not reason from these observations on the use of a weak and peculiar opium upon a community living under conditions very different from our own as to the effects of the opium of commerce on Americans and Europeans living at home; nevertheless, Dr. Hehir's contribution to the literature of opium must be said to be very valuable.

THE ABSORPTION OF IRON.

IN the April number of the *Journal of Physiology* there is an article on this subject by Dr. A. B. Macallum, associate professor of physiology in the University of Toronto. The article is largely founded on the author's own experiments, but it is also in great part critical. Experiments on guinea-pigs and other animals have shown to the author's satisfaction that the intestinal mucous membrane absorbs inorganic iron compounds to an extent varying with the nature of the compound and with the quantity of it given. When the dose is small, he says, absorption occurs only in that part of the intestine, a few inches in length, which adjoins the pylorus, but when a large quantity is given at one time the process of absorption may be carried on by the mucous membrane of the whole intestine. In the former case the result, he thinks, depends on the complete precipitation, in the form of hydroxide, of the iron of the salt unabsorbed in the thoroughly mixed bile, chyme, and pancreatic juice; and in the latter case the large amount of the iron salt first destroys the alkalinity of these fluids, and then the excess of the salt unaffected and remaining in solution undergoes absorption.

The intestinal epithelial cells transfer the absorbed iron to the underlying elements at once when the quantity absorbed is small, but when a large amount is absorbed the epithelial cells are found to contain some of it. Though some of the subepithelial leucocytes of the villi appear to carry part of the absorbed iron into the general circulation, probably the more important agent in the transfer of the inorganic iron compound from the villi to other parts of the body is the blood-plasma. Marfori's albuminate and the commercial "peptonate" of iron, when administered to guinea-pigs, seem to stimulate the leucocytes to invade the epithelial layer of the intestinal villi. Of the inorganic compounds belonging to the "chromatin" class, that present in egg-yolk (Bunge's hæmatogen) undergoes absorption in the intestine of the guinea-pig and in that of *Amblystoma.* In these animals, but more especially in the latter, after they have been fed with the yolk of egg for several days, the cytoplasm of the liver cells yields decided evidence of the presence of an inorganic iron compound belonging to the "chromatin" class and derived from the yolk. The mode of absorption of yolk "chromatin" is obscure, but the process appears to be connected in some way with the absorption of the fat with which the iron compound is closely associated in the yolk.

PERSISTENT SNEEZING UNDER CHLOROFORM ANÆSTHESIA.

In the April number of the *Indian Medical Gazette* Dr. Chalke, of Berhampore, relates the case of a Hindu man, thirty-four years old, who was admitted into the Municipal Hospital for a staphyloma of the cornea with disorganization of the eyeball which required extirpation. He had also granular lids. It was decided to remove the eyeball, and the author administered chloroform. When the patient was completely anæsthetized Dr. Wilkins applied a blepharostat. Almost immediately the patient began to sneeze, and, after sneezing persistently for about two minutes, recovered consciousness. In the meantime the speculum had to be removed. The patient was again put under the influence of chloroform and the instrument adjusted, when the sneezing began anew and he recovered consciousness as before. For a third time this sequence of occurrences took place. The operation was postponed, and after a lapse of four days the patient was anæsthetized again with chloroform, the inhalation of which was preceded by a hypodermic injection of cocaine. He was anæsthetized very rapidly and the speculum adjusted, but sneezing began at once and he recovered consciousness. He was chloroformed again and a four-per-cent. solution of cocaine was dropped into the affected eye at frequent intervals as a local anæsthetic. On this occasion no sneezing occurred on applying the speculum, and the operation was performed without further trouble.

In explanation of the persistence of the reflex which gave rise to the sneezing under full anæsthesia, the author adduces a hyperæsthetic state of the sensory nerves of the conjunctiva and cornea, giving rise to an impulse transmitted to the mucous membrane of the nose through the nasal nerve, a branch of the ophthalmic. He thinks that this hyperæsthetic area was not completely anæsthetized until cocaine was used in addition to the general anæsthetic.

MINOR PARAGRAPHS.

THE PROGRESS OF CREMATION.

At a recent meeting of the French Society for the Propagation of Cremation, as we learn from the *Progrès médical* for April 7th, an account was given of the progress of cremation in various countries. The secretary general of the society, M. Georges Salomon, said that the United States headed the list of countries in which cremation was practiced, and added that in various parts of the country crematories had been erected. Progress had been made in England also. In regard to Germany, there was a certain amount of continuous agitation at Frankfort, and there was a small crematory at Offenbach. Organizations in Berlin, Munich, Leipsic, Stuttgart, Nuremberg, and Stettin had petitioned for permission to exercise cremation. In Switzerland there had been very decided progress. In Italy the number of towns in which cremation was practiced was still increasing. In Sweden the practice was thus far only tolerated; it was carried on in Stockholm and in Göthenburg. As for Denmark, seven incinerations had taken place in Copenhagen between the 1st of January, 1893, and the 3d of February, 1894. In Austria a society was actively pursuing its purpose of obtaining permission to practice cremation. In regard to Holland, the cremation society was still under the necessity of cremating its members in foreign parts.

THE CRAIG COLONY FOR EPILEPTICS.

Following the example of some European countries, New York State has provided for the establishment of a colony for epileptics, Governor Flower having recently signed the bill authorizing the Craig colony in Livingston County. There are five managers of the colony, each of whom serves for five years, without compensation. The Governor has appointed Dr. Frederick Peterson, of New York, Mr. W. H. Cuddeback, of Buffalo, Dr. Charles E. Jones, of Albany, Mrs. C. F. Wadsworth, of Geneseo, and Mr. George M. Shull, of Mount Morris. At a recent meeting of the managers Dr. Peterson was elected president and Mr. Shull secretary of the board. The Assembly has appropriated $140,000 to purchase the land, erect buildings, etc., and meet the necessary expenses.

GASTROPLICATION.

In the *Centralblatt für Chirurgie* for April 21st there is a preliminary communication by Professor Brandt, of Klausenburg, concerning an operation for dilatation of the stomach which he calls gastroplicatio. The abdominal cavity is opened, and the wall of the stomach is then folded upon itself and the fold made permanent by means of sutures passed through the peritoneal and muscular layers. The author gives the notes of a case in which this operation was performed. The patient, a woman, twenty-six years old, was able to leave her bed on the tenth day. Nothing is said of her subsequent condition. The author remarks that a similar operation was advocated in the same journal in 1892, under the name of gastrorrhaphy.

AN ECCLESIASTIC'S REPUTATION SAVED BY THE OBSTETRICAL CALENDAR.

Lyon médical quotes from *Vratch* a condensed version of a story published in the *Médecine russe* to the effect that a certain Russian curate's wife was confined on December 23d. This occurrence led the villagers to complain to the archbishop, alleging that she must have conceived on the 25th of March (Good Friday), but a physician allayed the scandal by showing by the obstetrical calendar that fecundation might have occurred a week or more earlier.

THE *LANCET* AND THE LATE DR. BROWN-SÉQUARD.

Under the subheading Complimentary Quotation the *Lancet's* Paris correspondent states that an obituary notice of the late Dr. Brown-Séquard published in the *Progrès médical* was an almost literal translation of the correspondent's own remarks that appeared in the *Lancet*.

MORE NEWSPAPER MEDICINE.

One of the newspapers says that a certain New York politician whose life was "seriously despaired of" six months ago, has now fully recovered his strength and gained twenty-five pounds in weight "at" no corresponding loss of energy.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 8, 1894:

DISEASES.	Week ending May 1.		Week ending May 8.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	6	0	7	0
Scarlet fever	147	11	157	13
Cerebro-spinal meningitis	0	0	7	3
Measles	239	14	296	15
Diphtheria	202	50	199	61
Small-pox	16	5	20	3

The New York State Board of Health.—It is announced that the secretary, Dr. Balch, has resigned, and that Dr. J. S. Barnes, of Watkins, has been elected to succeed him.

Changes of Address.—Dr. W. Freudenthal, to No. 943 Madison Avenue; Dr. T. Lewinski, to No. 16 Jefferson Street; Dr. Edward N. Liell, to No. 109 West Eighty-fourth Street; Dr. C. A. von Ramdohr, to No. 45 Irving Place; Dr. J. Wolfson, to No. 302 Montgomery Street, Jersey City.

The Death of Dr. A. A. Lutkins, of Jersey City, took place on Wednesday, the 9th inst. The deceased was a graduate of the Medical Department of the University of the City of New York and had for many years been a busy and highly respected practitioner.

Society Meetings for the Coming Week:

Monday, *May 14th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Society of Medical Jurisprudence, New York; Lenox Medical and Surgical Society (private), New York; Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, *May 15th:* Illinois State Medical Society (first day—Decatur); Pennsylvania State Medical Society (first day—Philadelphia); New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Kings and St. Lawrence (annual), N. Y.; Baltimore Academy of Medicine; Hampden, Mass., District Medical Society (annual—Springfield).

Wednesday, *May 16th:* Ohio State Medical Society (first day—Zanesville); Illinois State Medical Society (second day); Pennsylvania State Medical Society (second day); Harlem Medical Association of the City of New York; Medico-legal Society, New York; New York Academy of Medicine (Section in Public Health and Hygiene); Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark).

Thursday, *May 17th:* Indiana State Medical Society (first day—Indianapolis); Missouri State Medical Association (first day—Lebanon); Ohio State Medical Society (second day); Illinois State Medical Society (third day); Pennsylvania State Medical Society (third day); New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *May 18th:* Indiana State Medical Society (second day); Missouri State Medical Association (second day); Ohio State Medical Society (third day); Pennsylvania State Medical Society (fourth day); New York Academy of Medicine (Section in Orthopædic Surgery); Baltimore Clinical Society; Chicago Gynæcological Society.

Saturday, *May 19th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Letters to the Editor.

A FOREIGN BODY IN THE RECTUM.

Joliet, Ill., *May 1, 1894.*

To the Editor of the New York Medical Journal:

Sir: I noticed in the *Journal* of April 28th an article entitled A Peculiar Case of Foreign Body in the Rectum. Several years ago a similar peculiar case came under my observation. I was then assisting a well-known surgeon in one of our Western cities, and have since scarcely thought of the occurrence until reading the above-mentioned article.

There came one morning an impatient rapping at the outer door of the reception room long before time for office hours. Upon opening the door I discovered an old, gray-haired man, bent nearly double, as I thought, from old age, but soon learned that the man was suffering intense pain. He was as pale as death, and his face wore that well-known drawn look that comes from such a cause. He told his story in a broken manner. It seems that the morning of the day before he had been greatly annoyed with protruding piles, and in a fit of desperation had whittled a stick some ten inches long to the diameter of about two thirds of an inch, with which he pushed back the piles. He experienced so much relief from this operation that he let go the stick, thinking to leave it there for a while, but the peristaltic action of the bowels drew it entirely out of his reach, and it kept on working upward, finally getting into the sigmoid flexure.

The physicians in his own little village had told him that he must die, that there was no help for him. He had heard of the ability of the doctor whom I was assisting, and made haste to reach him as soon as possible, coming twenty miles by rail in that agonizing condition.

The doctor doubted his ability to reach the stick, but went to work at least to try, with visions of a laparotomy floating through his mind.

He gave a warm rectal douche and then proceeded to probe for the stick, having no idea as to its length, thinking probably to procure a body three or four inches long; but imagine his surprise, when he at last was enabled to seize it with the small obstetrical forceps and gradually work it out, to see such a long piece.

He made the remark that if any one had told him of such a case, or had he read it, he would not have believed it. But the stick can be seen to-day among his curiosities.

The man went home happy as a man who had received a reprieve when about to be hanged. He had been at death's door, but the door had been closed against him for a while at least.

The mystery was the length of the stick and the rapidity with which it was traveling.

Margaret E. Simmons, M. D.

A LOST MANUSCRIPT.

30 West Thirty-fifth Street, *May 7, 1894.*

To the Editor of the New York Medical Journal:

Sir: A manuscript has been lost bearing the following name: A Retrospect of Ophthalmology from Nadir to Zenith, with Special Reference to the History of Cataract.

This constituted the opening ophthalmic lecture in the new building of the Post-graduate Medical School and Hospital. It will be published under the amended name, A Retrospect of Cataract from Nadir to Zenith. Editors are respectfully requested not to accept a paper with the above-mentioned or a similar name from any one but the undersigned.

H. Davison Schwarzschild, M. D.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

Meeting of March 7, 1894.

The President, Dr. Frederick Holme Wiggin, in the Chair.

(*Concluded from page 504.*)

Prolonged, Non-obstructed Labor in the First Stage; its Management.—Dr. J. Clifton Edgar read a paper with this title. (See page 582.)

Dr. E. H. Grandin said that the drugs had been very few which had proved useful in his hands in tedious labor not due to any pelvic deformity or to malposition of the child. He had tested all of them, and had come back to the use of the older ones. Chloral, in fifteen-grain doses every half-hour up to forty or sixty grains, he still found useful, particularly where the cervix was rigid and where the uterine contractions were not normal because of nervous irritability. He did not like to give opium to the lying in woman or the puerperal woman, for the reason that he was desirous above all things of keeping the intestinal canal active. He could not recall a case where he had given opium to the parturient woman. Where it was desirable, however, codeine should be used. He had found quinine very valuable, given by the rectum in doses of thirty grains, and he preferred to give it in hot solution, because it was then more quickly absorbed. It certainly intensified the pains, acting, as he thought, rather as an irritant to the uterus than through the nervous system. He had had no experience yet with strychnine in obstetric practice, but would certainly give it a trial.

Passing to the use of mechanical means for overcoming *inertia uteri*, he said he had absolutely no use for the dilators which had been exhibited. He could conceive of the Champentier dilator doing a great deal of harm, and it was unnecessary, because the human hand would accomplish everything which this would do, and without the attendant danger. He did not approve of the use of glycerin and stilettes in the uterus, because we desired especially to maintain the integrity of the membranes in order to have the conditions favorable for version in case this operation should be forced upon us. The injection of glycerin *might* cause a premature rupture of the membranes, and the same objection applied to the introduction of a stilette. Where mechanical means were required, he had for years favored the use of the hand, and the results so obtained and reported by him, he thought, were fully as good, if not better, than those secured by other means. In a former paper, in which he had advocated the use of the hand, he had unfortunately used the term *accouchement forcé*, which had led to the erroneous impression that he had advocated forcible dilatation of the cervix and lower uterine segment. As, however, he had stated that he had taken from thirty to forty minutes to dilate the cervix, this should have made it sufficiently evident that he was *not* using *forcible* dilatation. His method was to introduce one finger after another until the entire hand was within the uterine segment; then, if there was an indication for immediate delivery, and if the membranes had not ruptured, he would immediately seize the foot, perform version, and extract. He wished, therefore, to emphasize the fact that we did not need in this country any of these rubber dilators, and in this opinion he was in accord with the reader of the paper. The hand could effect dilatation of the rigid cervix under deep chloroform anæsthesia. He preferred chloroform for this purpose, because it relaxed the uterine spasm more than ether.

Dr. Charles Jewett said that he had unfortunately come too late to hear all the points made in the paper. He thought the cases under discussion could be divided into two classes—viz., (1) inertia of the uterus; (2) painful but non-progressive labor. In the first class active interference was not ordinarily called for. There was no objection, however, he thought, to measures which did not interfere within the passages—*e.g.*, postural measures, hot and cold compresses over the abdomen, enemata of glycerin, etc. With regard to the second class, the trouble was generally to be looked for in the upper or active segment of the uterus. We were dealing not so much with obstruction as with irregular and inefficient pains. The two drugs upon which he had relied chiefly were chloral and morphine or some preparation of opium. These drugs, especially the latter, would generally do one of two things—regulate the pains and at once establish normal labor or put the patient to sleep. In the latter event, after a few hours' rest, the delivery, as a rule, was rapidly completed. He had had a very satisfactory experience with opium; its bad effect on the intestinal canal could easily be counteracted.

Regarding the mechanical measures, he agreed with the last speaker that the hand was the best instrument. Dilating bags were clumsy, and often inefficient, and could not be used as intelligently as the hand. Great care, too, was needed to avoid much force. He introduced the fingers one after the other, and finally the thumb. After inserting the whole hand, he closed the fist. This considerably enlarged the dilator, and was the most dangerous part of the process. It was at this time that there was the greatest risk of lacerating the uterus, if the operator was not careful to gauge the force employed correctly. Rupture of the cervix was, however, unnecessary if proper care was observed. The intra-uterine injections of glycerin he thought a justifiable and a valuable measure for accelerating labor. He had also employed Duhrssen's incisions in a few cases, but reserved this procedure for desperate cases where the slower methods were not applicable. He had not used it until the os internum had become obliterated, at which time four incisions, carried to the vaginal junction, would often give sufficient space to admit of rapid delivery. In one case, however, in which he had employed this method the posterior incision had been extended upward by a laceration into the uterus, but not into the peritoneal cavity. Regarding the question of anæsthetics, he would like to hear further opinions as to the relative effect of ether and chloroform as relaxants. Recently he had been using ether as the obstetric anæsthetic in his hospital service, and there had been several cases of post-partum hæmorrhage.

Dr. Malcolm McLean said that he would speak on the subject of Barnes's dilators. He was not at all willing to discard these instruments, and for a reason to which the previous speakers had not alluded. In the use of any mechanical means for dilatation of the cervix it must be remembered that there were two demands in practice—viz , (1) for very rapid delivery —misnamed *accouchement forcé;* and (2) where delivery did not need to be so rapid. In the former there was not much time for any of the interior rubber dilators, except to start the dilatation. In his judgment it was better to begin with them and end with the ordinary manual methods as already described. In certain other cases where there was no such hurry, he thought we should imitate Nature very much more closely than by the manual method by causing a softening of the fibers of the cervix uteri. It was well known that there was a process of softening of these tissues by a change of nutrition produced by pressure, just as there was a change in the consistence of other tissues produced by constant pressure. Divulsion of a muscle was one thing, and a gradual, slow pressure causing absorption and relaxation was another. By the latter, the pressure of the bag of waters—that very valuable adjuvant in parturition—was imitated. If, therefore, the Barnes's dilators were properly applied, and left for two or three hours—and this could be done if a properly constructed dilator was employed—it would be found that the whole vagina instead of being comparatively dry would be bathed with mucus, and that the cervix would be soft and in a favorable state for the subsequent operative measures. He was sorry to see that there was a tendency to throw aside this instrument. The speaker then exhibited a dilator of his own construction. It had no pocket as in the older Barnes's bag, was easy of introduction, and consisted of a double bag. The instrument having been inserted, one pocket should be filled with a measured quantity of sterilized water. Within an hour this bag would become loose, and, if constructed as on the plan of the older instrument, it would have to be removed and a larger size inserted. With his instrument, however, it was only necessary to dilate the other compartment of the dilator, and within two hours the dilatation of the cervix would be equal to that obtained by the widest stretching out of the fingers. By this contrivance we obtained by elastic pressure that continued and steady dilating force which could not be maintained with the human hand. He had used this method and this instrument for the past ten years and with the utmost satisfaction, and Dr. Barnes had himself stated that he considered it an improvement on his original instrument.

Dr. W. Evelyn Porter thought the paper a very valuable one for every practitioner, because the delays occurring in this stage of labor often caused great waste of time, to say nothing of the effect on the patient. Regarding the use of drugs, he preferred chloral hydrate to all others, and this seemed to be the opinion of most obstetricians. As a mechanical means of dilatation he favored the use of the Barnes's bag as modified by Dr. McLean. With the older instrument he had experienced the usual difficulty in keeping the bag in position long enough to secure satisfactory dilatation. When there was any difficulty in using any such instrument, manual dilatation might be resorted to until a larger sized bag could be easily introduced.

Dr. Edgar said, regarding the use of the catheter and intra-uterine injections of glycerin tending to cause rupture of the membranes, that he did not think this accident should occur if reasonable care was exercised. He had omitted to mention in his paper that he had found enemata of pure glycerin exceedingly useful in accelerating the first stage. While the glycerin suppositories would not act under two hours, or perhaps not even then, two or three drachms of pure glycerin when injected into the rectum often acted very promptly. He wished to go on record as quite agreeing with Dr. McLean in not discarding Barnes's bag; he only wished to emphasize the fact that such instruments as those of the French school were sometimes dangerous, as shown by the case he had reported in which a vertex presentation had been changed to a shoulder. He also quite agreed as to the value of starting the dilatation with the bag before doing manual dilatation of the cervix when rapid delivery was demanded, as in case of eclampsia. The Barnes's bags were of the most value in causing the disappearance of the supravaginal portion of the cervix. Only a few nights before he had been called in consultation by a member of this society to a case of eclampsia at the sixth month and a half. The woman had been having her second convulsion when seen. Morphine, chloroform, and veratrum viride had been used to control the seizures; several ounces of glycerin had been immediately injected to the fundus of the uterus, and a Barnes's bag inserted in the os as soon as dilatation permitted. By these means the supravaginal portion of the cervix had been made to disappear partially, and when this had once been accomplished, the woman was completely anæsthetized, and by means of rapid manual dilatation and version the uterus had been emptied in forty minutes.

The Dietetic Treatment of Phthisis.—Dr. Henry P. Loomis read a paper with this title. He began with a statement that in his opinion judicious feeding was more potent in the treatment of consumption than either climate or medication. Milk and meat, he said, were the articles that in themselves furnished the most heat-producing and force-producing elements with the least tax upon the digestive functions. Milk should not be given in quantities of more than half a pint at a time, and that amount should be sipped during a period of ten or fifteen minutes. If large amounts were given daily, limewater should be added in the proportion of a tablespoonful to half a pint of milk. An elegant way of giving milk was to administer it scalded, with the addition of Seltzer water. Patients who could not take milk might take kumyss or matzoon. If the digestion was particularly weak, the milk might be peptonized, but on prolonged use peptonized milk was apt to become very distasteful. As a rule, from two to four quarts of milk should be taken in the course of twenty-four hours. Meat was to be given cooked or, if large quantities were to be taken, in the form of the expressed juice. With a squeezer, about half a pint of juice could be obtained from a pound of meat. The meat should first be broiled over a brisk fire, and then cut up into moderately small pieces, but no heat should be applied to the juice after it was squeezed out. If it was desirable to warm the juice after it had become cold, that could be done by placing the cup containing it in hot water. Beef-tea should never be used in consumption. Another excellent preparation of meat was that known as scraped meat-balls. The material was secured by scraping the pulp from steak, either with a fork or with a meat-scraper, so as to leave the stringy part behind. The scrapings were to be rolled into small balls, broiled over a quick fire, and served hot with pepper and salt or Worcestershire sauce. The scrapings might also be used raw, spread between thin slices of bread. An excellent meat powder might be prepared by chopping boiled beef into fine pieces, drying it over a water bath, and grinding it fine in a coffee mill. Meat powder, prepared in this way or by various other methods, might be added to the liquid articles of diet. Alcohol and cod-liver oil came next to meat and milk as articles of food for consumptives. From a dietetic point of view, pulmonary consumption might be divided into three stages, which were not to be understood as corresponding to stages of the lesions characteristic of the disease: 1. That in which the digestion and appetite were not affected. 2. That of incipient digestive disturbance, lasting until the time when the stomach would no longer tolerate solid food. 3. That lasting from the end of the second period until the time of death. Dieting should be begun during the first stage—indeed, as soon as the disease was diagnosticated. Albuminous substances and carbohydrates should form the substance of the three principal meals, and milk the chief drink. In the second stage cough mixtures should be avoided as much as possible and food should be taken at least six times in the twenty four hours. This included milk with limewater given early in the morning, at bedtime, and between meals, but the milk should never be given at the same time with the beef juice. In the third stage milk and limewater could be alternated with predigested food, such as beef peptonoids. The following might serve as an example of a dietary in the first stage of the disease: On awakening, the patient was to take half a pint of a mixture of equal parts of hot milk and Seltzer water, sipping it in the course of half an hour. The breakfast might consist of oatmeal or cracked wheat with a little sugar and plenty of cream, rare steak or chop, cream toast, half a pint of milk, and a small cup of coffee. At ten o'clock in the morning half a pint of milk or a small teacupful of expressed beef-juice with stale bread would constitute an appropriate luncheon. The midday meal might consist of fish, chicken, or scraped-meat balls, with stale bread and plenty of butter, baked apples and cream, and milk. Another luncheon, at four o'clock in the afternoon, might consist of a bottle of kumyss and a sandwich of rare scraped beef. At six o'clock in the afternoon a substantial dinner might be taken consisting of soup, rare roast beef or mutton, game, stale bread, and spinach, cauliflower, or other fresh vegetables, according to the season.

Dr. E. Le Fevre said that he thought those who had done much dispensary practice had been impressed with the tolerance of the alimentary tract to the retention and absorption of food of all kinds. From one point of view, the prognosis could be made almost entirely on this one factor. For example, in those who had the power of absorbing food in almost any quantity and at almost any time, the prognosis was comparatively favorable, notwithstanding that there might be an extensive infection. Although we all recognized the necessity for forced feeding, it was almost impossible to carry out this treatment in the city. In the country, where patients could walk about in the fresh air, it was comparatively easy to get them to take large quantities of food; it was very different however, with patients living in close and overheated rooms in the city, no matter how carefully we tried to gauge the quantity of food and regulate the intervals between the meals. Regarding the climatic treatment, he said that although a climate might be admirably suited to the phthisical subject, and the elevation above the sea level also satisfactory, it was often impossible to secure proper food and proper cooking; and hence it was that these factors often more than counterbalanced the benefit derived from change of climate. Although milk contained the necessary elements of nutrition, he had often great difficulty in getting patients to take the requisite quantity of it. If it was taken between meals, they complained that it caused heaviness and discomfort. He had tried mixing it with limewater and adding carbonate of sodium and salt, and also the plan of giving it as a "milk-shake," but had found much difficulty in carrying out any of these methods. Like the author, he preferred a meat diet chiefly. Any one who had been fed on these meat balls or any of these special preparations knew that, no matter how tempting they might look, they soon cloyed the palate; hence he relied upon meat prepared in the ordinary way as long as possible. He had found that some patients did not improve until starches and sugars were added to the meat diet. The most unpromising cases were those in which the dyspeptic symptoms occurred early. These cases were not simple instances of dyspepsia; the symptoms were really a part of the systemic disease.

Dr. C. E. Quimby said that the general statements in the paper could not but meet with unquestioning approval. While admitting in the main the accuracy of the proposition that gain in weight was a direct index of improvement of the disease condition, he believed there were circumstances where this was not true. In an article he had written some two years since upon the treatment of phthisis by a special method he had used quite extensively, by which the respiratory functions and inferentially oxygenation were very greatly increased, he had referred to the fact that in many cases patients undergoing this treatment failed to make a gain in weight proportionate to the improvement in their pulmonary conditions, such as was often observed in connection with forced feeding and favorable climatic influences. Even when the change in the local process was so rapid and favorable as to cause surprise, there was frequently only slight gain in weight. He had therefore been led to the conclusion that gain in weight and improvement in nutrition were not synonymous or necessarily in fixed ratio. It should be remembered that many persons became overfat from lack of oxidation; a condition which was one of defective rather than improved nutrition, and which might be developed in phthisis when the powers of intestinal absorption were in excess of the capacity of a crippled lung to take in oxygen. He had therefore come to regard the muscular tissue as a more certain index of the character of systemic nutrition than the adipose tissue. When the flesh became firmer in the calves of the legs or on the shoulders he felt that the patient was improving decidedly, even though there was but little increase in weight.

Instead of dividing phthisis into the three classical stages, he had found it convenient to divide it into what might be called "phthisis florida," where there was apparently an extensive localized hyperæmia associated with the tubercular process, and into cases of disseminated phthisis, where the process was going on much more gradually and tubercular tissue was breaking down slowly and being replaced by fibrous tissue. In the first form he questioned whether forced feeding was desirable. He was inclined to believe that it was detrimental in precisely the same way that exercise of the lung was detrimental to the local condition. He believed that a partial starvation diet would tend to diminish the intensity of the inflammatory processes more than forced feeding. In reference to stimulants, he said that, where there was a tendency to marked fever, early or late in the disease, and whenever there was a tendency to intense congestion of the lungs, as shown by hæmorrhages and by the physical signs, he would certainly withhold alcoholic stimulants; but in other cases it was his general rule to attempt very early in the disease to favor assimilation by giving his patients a good glass of sherry with their meals. He was also sufficiently old-fashioned to believe that mercury was useful wherever it was desirable to stir up the assimilative processes. An occasional mercurial purge, followed by Warburg's tincture, not only relieved intestinal fermentation and dyspepsia, but, he believed, was a powerful stimulant to the nutritive processes. It was also very important to attend to the thorough clearing out of the lower bowel. This had been impressed upon him some years before by a phthisical patient who had had occasional elevations of temperature which he had not been able to account for until he had discovered a distended colon. The use of high enemata had put an end to these exacerbations. Since that time he had been careful to keep himself and the patient well informed as to the activity and condition of the bowels. He had seen very little of that disgust for food in patients undergoing the special treatment previously referred to, about which so much had been said in connection with phthisis. He could recall many cases where the digestion had remained good from first to last. This, he thought, was possibly explained by the effect of that treatment in promoting the circulation and the activity of the assimilative processes.

Dr. F. M. **CRANDALL** thought that all would agree with the author as to the advisability of giving meat very largely. He had seen three patients this winter who had been under a quack's treatment, which had consisted of the use of large quantities of hot water and beef. One of these patients had taken nothing but meat for three months, and there had been a general as well as a local improvement. There had been no craving for other food. In another case, that of a child, the meat had been taken several times a day quite greedily. This had led him to push this treatment more actively than formerly, and he had found that, though there was usually a certain amount of disgust for food at the end of the first two weeks, if the treatment was persisted in this quickly disappeared.

Dr. **REGINALD H. SAYRE** wished to corroborate the statements made by the last speaker. He knew of a patient who had taken a specially prepared form of beef for over two years, almost to the exclusion of other food. In tuberculosis of other parts of the body than the lungs it seemed to him exceedingly important that the patient should be overfed in order that the tissues might be placed in the best possible condition for withstanding the tubercular process. The effect of such treatment was very manifest in children with Pott's disease and tubercular joint disease.

Dr. **NEWBERG**, of Chicago, said that in the dietetic treatment of all patients he would be largely governed by Sir William Robertson's dictum, that most people had a true palate—in other words, he believed in patients eating what agreed with them. A newly born baby required, first, air, secondly, sleep, and thirdly, food; and he believed in the majority of diseases it was well to take these three factors into consideration. He thought this very general rule would hold good also in phthisis. In neurasthenic patients he believed it was well to give milk in as non-stimulating a form as possible, and here matzoon was appropriate. In less nervous patients, however, he thought kumyss was more suitable. The majority of physicians seemed to overlook individual peculiarities. For a year and a half, while at Charity Hospital, he had seen a large number of phthisical patients in all stages of the disease, yet these had seemed to do well on almost any kind of diet.

Book Notices.

Hospitals, Dispensaries, and Nursing. Papers and Discussions in the International Congress of Charities, Correction, and Philanthropy, Section III, Chicago, June 12 to 17, 1893. Edited by JOHN S. BILLINGS, M. D., and HENRY M. HURD, M. D. Baltimore: The Johns Hopkins Press. London: The Scientific Press, Limited, 1894. Pp. xiv–719.

THE papers and discussions included in this volume constitute the transactions of Section III of the International Congress of Charities, Correction, and Philanthropy that was held during last June in Chicago. The first paper in the volume is the address of the chairman, Surgeon John S. Billings, of the army, on The Relations of Hospitals to Public Health, especially in the training that is afforded physicians and nurses. Lord Cathcart, in a paper on The Medical Charities of the English Metropolis, calls attention to the lack of co-operation between those charities, and explains the scope of their work. Miss Hampton, in a paper on Educational Standards for Nurses, calls attention to the insufficient instruction given nurses in many training schools, and urges that these schools should unite to establish a standard of education from which all may be judged. Mr. H. C. Burdett's paper on Hospital Finance and Methods of Keeping Accounts has been elaborated into a volume that was recently noticed in these columns. Lieutenant-Colonel J. Lane Notter, A. M. S. Eng., in a paper on The Applicability of Hygiene to the Conditions of Modern Warfare, considers how far much of the disease and suffering incidental to military operations may be mitigated if not obviated.

Richard Wood, of Philadelphia, in a paper on The Trustee of the Hospital, says that the relation between the managers of a hospital and its medical staff should be almost, though not quite, that of partnership; that the balance should be in favor of the trustees is shown by the statement that "the staff should respect the views of the managers touching certain methods of medical and surgical practice." This position is not new, it is general throughout the country; and yet the author himself, in his reference to military and naval hospitals, recognizes that the institution can be most efficiently administered without trustees—but without physicians it would undoubtedly collapse. The objection to the interference of trustees in the management of the medical matters of the hospital was indicated by Mr. H. C. Burdett in his discussion of this paper. This topic is further discussed by Dr. E. Cowles, in a paper on The Relations of the Medical Staff to the Governing Bodies in Hospitals, in which the position is taken that the former should properly subordinate itself to the latter. Mr. H. Merke contributes a paper on The Administration of Hospitals.

Miss L. L. Doch furnishes a paper on The Relation of Training Schools to Hospitals.

In the discussion on Dr. H. M. Hurd's paper, on The Relation of Hospitals to Medical Education, Mr. Burdett, than whom none can allege a greater acquaintance with hospitals, urges that every medical man be paid for the services he renders hospitals. This position is tenable on every ground of equity and justice. The community would hold up to contempt and condemnation the man or the corporation that took advantage of the needs of a workingman to give him food and shelter in return for his labor and the experience he was acquiring; but throughout this and, save in army, navy, and marine and railroad hospitals, and in insane asylums, physicians are serving on the visiting and resident staff without remuneration, with hardly an exception, ostensibly because they are acquiring experience, actually because it is assumed to be useless to pay for what may be obtained for nothing. Why not make nurses serve in like manner for equally just or unjust reasons? Mr. Burdett is right; to pay salaries would "confer an immense *justice* on the younger members of the medical profession."

Mr. J. R. Lathrop's paper, on Hospital Accounts and Methods of Bookkeeping, explains the system in vogue at the Roosevelt Hospital.

Dr. H. M. Lyman advocates the advantages of paying patients in hospitals, inasmuch as they serve to make the institutions self-supporting. The Presbyterian Hospital of Chicago, in allowing physicians unconnected with the visiting staff to treat pay patients, sets an example for the large institutions of this city that do not offer such privileges.

Dr. G. H. M. Rowe, Dr. Moritz Pistor, Dr. A. Herbert, Dr. W. Douglas Hogg, and Dr. M. L. Davis have interesting papers on Wards and Hospitals for Contagious Diseases.

Dr. H. B. Stehman and Miss M. A. Boland have papers on Hospital Diet.

Dr. A. C. Abbott furnishes a paper on The New Laundry of the University of Pennsylvania Hospital.

Passed Assistant Surgeon Gatewood has contributed an interesting paper on Naval Hospitals; Dr. Grossheim, one on Military Hospitals; Surgeon Stoner, one on Marine Hospitals; Mr. Francis Vacher, one on Cottage Hospitals; and Dr. A. Baginsky, Dr. W. W. Ord, and Miss M. L. Rogers have papers on Children's Hospitals.

There are several papers on different hospitals in this country, on nursing in various countries, and on first aid to the injured.

The papers express the views and indicate the experience of many competent observers, and the volume is an interesting and valuable contribution to the literature of hospitals and hospital administration.

Burdett's Hospital and Charities Annual, 1894. Containing a Review of the Position and Requirements, and Chapters on the Cost of Management, of the Voluntary Charities, and an Exhaustive Record of Hospital Work for the Year, etc. Edited by Henry C. Burdett, Author of *Hospitals and Asylums of the World*, etc. London: The Scientific Press (Limited), 1894. Pp. cccxxviii to 522. [Price, 5*s.*]

We are glad to note in the appearance of this volume the presage of the truth of the author's prefatory statement, that its annual publication is an established fact; for we know of no layman who has shown a more intelligent interest in hospitals and the features pertaining to their administration than Mr. Burdett, or who is as competent to undertake the compilation and arrangement of the information this work contains. Like many another book, it inadequately represents the great amount of labor that has been expended in its production, and only those who have undertaken work of this character can appreciate that labor.

In his first chapter Mr. Burdett presents statistics that give an idea of the vast interests involved in the topics under consideration. The combined revenue of the charities that have their headquarters in London amounts to seven million pounds sterling, a sum equal to half of the whole capital of the Bank of England, and a sum that is greater than the total annual revenue of all the British colonies, except New South Wales, Victoria, and Canada.

Another presentation of the subject is the fact that the amount raised annually in the United Kingdom by the voluntary rate in aid of charities far exceeds that levied by the income tax, and is equal to the whole yearly contributions to the national finances in Pitt's time.

He also refers to the disappearance of the prejudice against hospitals, citing the enforcement of the isolation of contagious diseases provided for by statute as evidence of the present feeling.

The author cites the objection of the Boston City Council to the establishment of outpost, or emergency, hospitals in districts remote from a central institution, because the administration of these emergency hospitals makes use of them as schools of medical observation and retains patients that should be transferred to the central hospital. Those familiar with the duties of the medical staff of such institutions will concede that such an opinion is not without foundation; but the circumstances attending an acute medical or surgical case may be such that it would be very desirable for the physician that first assumed charge of the patient to continue his supervision; and often these patients are in such a precarious condition that a transfer elsewhere, by means of either a boat or an ambulance, would seriously jeopardize the chance of recovery or would even hasten death. The writer has known patients with pulmonary tuberculosis to be so retained for several days rather than expedite death by transferring them to the central hospital. We believe that the administration of such an institution is justified in a city like New York or London, where distances are so great. The three emergency hospitals maintained by the city and the down-town hospital maintained by the New York Hospital do work that compensates for any unnecessary detention of patients.

The author refers to one crying need of all metropolitan hospitals—convalescent homes. It is indisputable that the usefulness of many institutions is crippled because they either retain patients too long, or do not retain them long enough. One of our New York hospitals had such demands upon it last winter that by the time admission of an applicant to the institution was possible he either had passed the crisis of the disease and was convalescing or had died.

The author is fully justified in his demand that all general hospitals should be provided with a ward for delirium tremens and doubtful cases. Alcoholism is not to be regarded as trivial, and every hospital physician will recall cases, besides those of fractured skull that were diagnosticated erroneously as alcoholism, in which the degree of intoxication seemed not unusual, but death terminated the case. Far better is it to treat all such cases than to be negligent in one, for the hospital physician is "his brother's keeper."

There is, indeed, need for more consumption hospitals, not only in London but throughout the world. In their establishment it would seem best to locate them elsewhere than in the city; in fact, we do not think that such institutions, except as emergency hospitals, should be allowed in metropolitan districts, but should be located at some sanitary site near the city.

The author's comment on the recent international and nursing congress are interesting, and we concur with him that decennial meetings are sufficiently frequent. He says of American nurses that they "have a breezy intelligence and independence that are very entertaining and attractive. They thoroughly believe in themselves and their mission; and, if they err at all, it is on the side of inclining to the refusal of all assistance from their friends and well-wishers."

The account of the effort to create a central hospital board for London is very interesting, but we fail to note any duty of such a board that is not already performed by the trustees or board of governors of a well-regulated hospital. There seem to us to be various obstacles to the successful accomplishment of such a plan, and we shall watch with much interest the manner in which our London brethren make this body a *fait accompli.*

The chapter on the cost of hospital management gives many valuable data; the author maintains that fifteen per cent. should be the maximum percentage of cost of administration to that of treatment.

The hope is expressed that the authorities of the principal hospitals in the United States will co-operate with those of the United Kingdom by adopting a system of accounts that will secure uniformity and lead to important and useful conclusions. Such a step might serve as the precedent for uniformity in other matters, such as the tabulation of diseases, duration of treatment, mortality, surgical operations, etc., that would make these reports of far greater value than they are. Of some twenty-five institutions in this country, the author finds from the statements published in their annual reports that the cost of maintenance per diem varies from forty-two cents in the Charity Hospital, New Orleans, to six dollars and thirty-six cents in the Massachusetts General Hospital; these figures he accepts with reserve, remarking that there must be a reasonable mean between them, and that if it were true that a patient who remained long enough at the former institution might gradually die of inanition, it seemed equally possible that he might be killed by luxurious living at the latter hospital. An analysis of his own tables will show some reason for the discrepancy; on account of climate it costs to heat the Charity Hospital about one third of what it costs to heat the Massachusetts General Hospital. Sisters of Charity perform the duties at the former institution, so that its salaries and wages account is more than twelve thousand dollars less. While the report for the Boston institution for 1892 is not at hand, that for 1891 states that 75,712 days of hospital treatment were afforded at a cost of one dollar and seventy-nine cents a day, and it does not seem possible that in 1892 only 23,275 days' treatment were afforded, making the daily cost more than six dollars.

One chapter gives the curious information that certain English hospitals require in-patients to provide certain articles of diet, clothing, and furniture, and even to pay for washing. It is almost supererogatory to state that Mr. Burdett unqualifiedly condemns such a system.

Two chapters are devoted to analyses of the Hospital Saturday and Sunday Organizations. It is mainly by the assistance of the latter of these bodies that the author has secured the adoption of a uniform system of audits and accounts.

It is a consummation devoutly to be wished for that some well-regulated city should establish a system of control whereby the multiplication of medical charities beyond the needs of the population could be prevented. We regret to say that Mr. Burdett is in error in stating that in "America every applicant is compelled to pay unless proof is afforded that his claim to free medical relief is based upon genuine necessity." Where a fee is exacted it is nominal, and no part thereof goes to the attending physician. So great is the competition for material among dispensaries that we have seen well-to-do patients unblushingly receive gratuitous medical services. Mr. Burdett's statistics show that in Dublin two in five, in Liverpool, London, and Edinburgh almost two in every five, and in Newcastle, Birmingham, and Manchester one in four of the population receives free medical relief as an out-patient. We think it is true that the larger the town the greater the abuse. While we entirely agree on every conceivable ground that every medical officer, whatever his position, attached to a hospital or medical institution should be paid for his services, we are not prepared to say that such a course would remedy the abuse of free dispensary relief.

While we have devoted considerable space to this interesting volume, perforce we have not considered many subjects of which it treats. Suffice it to say that all physicians interested in dispensaries or hospitals will find it a mine of valuable and suggestive information.

Tumors: Innocent and Malignant. Their Clinical Features and Appropriate Treatment. By J. Bland Sutton, Assistant Surgeon to the Middlesex Hospital, London. With Two Hundred and Fifty Engravings and Nine Plates. Philadelphia: Lea Brothers & Co., 1893. Pp. i to xvi–511. [Price, $4.50.]

Those who are familiar with the literature of malignant neoplasms will recall the many valuable contributions that Mr. Sutton has made to it during the past eight years, and it is not a matter of surprise that he should have concluded to formulate his studies in this volume, in which he draws upon his wide knowledge of human and comparative pathology as well as of animal morphology. Indeed, he says that without the aid of comparative pathology any attempt to catch the deeper meaning of many tumors is as difficult as an endeavor to decipher a palimpsest in which the first characters, written in an unknown tongue, have been imperfectly removed from the parchment and are allowed to mingle with the second inscription.

He considers that the terms scirrhus, colloid, and medullary or encephaloid have dominated the minds of surgeons and hindered progress long enough; and he employs the term cancer in a sense equivalent to malignant adenoma, the species being determined by the gland in which the cancer arises. The confusion that prevails in oncological literature in regard to the use of such terms as classes, groups, species, varieties, etc., seems to Mr. Sutton to be due to the want of even a moderate acquaintance with systematic zoology, for the zoologist at least uses these terms in a consistent manner. The author arranges tumors in four groups: Connective-tissue tumors, epithelial tumors, dermoids, and cysts. Each group contains several genera, each genus has one or more species, and of each species there may be one or more varieties. The connective-tissue group contains lipomata, chondromata, osteomata, odontomata, fibromata, myxomata, gliomata, sarcomata, myomata, neuromata, angeiomata, and lymphangeiomata. The second, or epithelial group, includes papilloma, epithelioma, adenoma, and carcinoma. The third, or dermoid group, includes the genera sequestration dermoids, tubulo-dermoids, ovarian dermoids, and dermoid patches. The fourth, or cyst group, contains the genera retention cysts, tubulo-cysts, hydroceles, and gland cysts, and there is a sub-group of pseudo-cysts, including diverticula, bursæ, natural cysts, and parasites.

Most of these genera are considered in separate chapters, and a comprehensive survey of the species and varieties is a feature of the volume. Take, for example, the chapters on sarcomata; the species round-celled sarcoma, lympho-sarcoma, spindle-celled sarcoma, myeloid sarcoma, alveolar sarcoma, and melano-sarcoma are first described; reference is then made to the infiltrating properties and burrowing tendencies of sarcomata; the secondary changes occurring in these neoplasms are mentioned; and then sarcomata of different tissues are discussed at sufficient length.

In the chapter on the ætiology of tumors the author suggests that it is desirable to arrange tumor germs in two groups—vestiges and rests. The former term he reserves for structures that are remnants of organs functional in vertebrates lower than man, while rests should be reserved for detached fragments of glands and isolated portions of tissue and epithelium. He believes that there are many facts that indicate that cancer is induced by minute parasites. Agreeing with many pathologists that tumors, innocent and malignant, are local troubles, the author urges that the safest and most effectual method of dealing with them is expressed in the sentence *thorough removal of the tumor, whenever this is possible, at the earliest possible moment.*

The book is beautifully illustrated, and it will undoubtedly be accepted as the latest and most authoritative exposition of neoplasms.

Anomalies of Refraction and of the Muscles of the Eye. By Flavel B. Tiffany, M. D., Professor of Ophthalmology and Otology in the University Medical College of Kansas City, Mo., etc. Author's Edition. Kansas City: Hudson-Kimberly Publishing Co., 1894. Pp. viii–7 to 307.

This is the most recent addition to the host of small works which attempt to present in brief space the science of ophthalmology. Most of the subject can be found as well if not better treated in a large number of books, foreign and domestic, while the recent advancements referred to are very doubtful in character, and not yet sufficiently proved to be advancements to be worthy of introduction as such into a text-book. One would think that in so small a work on so great a subject repetition would certainly be avoided, but the constant repetitions in this book are very wearisome. As two examples from many, the prisoptometer is figured and described on page 94 and on page 191, the pupillometer is figured and its use explained on pages 92 and 150. The book is not a very necessary addition to our libraries.

Clinical Diagnosis. By Albert Abrams, M. D. (Heidelberg), Professor of Pathology, Cooper Medical College, San Francisco, etc. Third Edition, revised and enlarged. Illustrated. New York: E. B. Treat, 1894. Pp. xi–273. [Price, $2.75.]

This little book, the third edition of which is now issued, is intended by its author to serve as "an index to or abstract of more pretentious works on the subject," and this it does very well, giving to those who may not possess the more important works of von Jaksch, Vierordt, or Da Costa all the essentials of clinical diagnosis.

In this edition all the latest methods of diagnosis, such as the use of the hæmatocrite, the centrifugal machine, and antral transillumination, are described.

BOOKS, ETC., RECEIVED.

Clinical Manual for the Study of Diseases of the Throat. By James Walker Downie, M. B., Fellow and Examiner in Aural Surgery for the Fellowship of the Faculty of Physicians, etc. New York: Macmillan & Co., 1894. Pp. xi–268. [Price, $2.50.]

Pain in its Neuro-pathological, Diagnostic, Medico legal, and Neuro-therapeutic Relations. By J. Leonard Corning, A. M., M. D., Consultant in Nervous Diseases to St. Francis Hospital, etc. Illustrated. Philadelphia: J. B. Lippincott Company, 1894. Pp. 7 to 328. [Price, $1.75.]

A Manual of Practical Obstetrics. By Edward P. Davis, A. M., M. D., Professor of Obstetrics and Diseases of Infancy in the Philadelphia Polyclinic, etc. Second Edition, revised and enlarged. With One Hundred and Thirty four Illustrations and Sixteen Full-page Plates, several of which are Colored. Philadelphia: P. Blakiston, Son, & Co., 1894. Pp. xii–9 to 351. [Price, $2.50.]

Disease and Race. By Jadroo. London: Swan, Sonnenschein, & Co., 1894. Pp. vi–121.

On the Features which distinguish Epidemic Roseola (Rose-rash) from Measles and from Scarlet Fever. By Clement Dukes, M. D., B. S. Lond. London: J. & A. Churchill, 1894. Read before the Members of the Medical Officers of Schools' Association at their Meeting on February 21, 1894.

Early Operations in Head Injuries. By William B. Van Lennep, M. D., Philadelphia. [Reprinted from the *Medical Century.*]

Some Considerations bearing upon Practice with Dynamic Antagonists in Cases of Drug-poisoning. By Charles S. Mack, M. D. Mich. [Reprinted from the *North American Journal of Homœopathy.*]

Contribution to the Study of Cerebral Surgery, based on an Operation for the Removal of a Tumor. By M. H. Richardson, M. D. Harvard University, and G. L. Walton, M. D. Harvard University. [Reprinted from the *American Journal of the Medical Sciences.*]

Remarks upon Appendicitis, based upon a Personal Experience of One Hundred and Eighty-one Cases. By Maurice H. Richardson, M. D., Boston. [Reprinted from the *American Journal of the Medical Sciences.*]

Essentials of Practice of Pharmacy. Arranged in the Form of Questions and Answers. Prepared especially for Pharmaceutical Students. Second Edition, revised. By Lucius E. Sayre, Ph. G., Professor of Pharmacy and Materia Medica, of the School of Pharmacy of the University of Kansas. Philadelphia: W. B. Saunders, 1894. Pp. ix–17 to 200. [Price, $1.] [*Saunders's Question Compends.*]

The Second Annual Report of the Sheppard Asylum, a Hospital for Mental Diseases. Baltimore, Md., 1894.

De l'éclairage des cavités de la face. Par le Dr. Maurice à Court Tucker, Paris.

The Conquest of Death. By Abbot Kinney. New York, 1893. Pp. ix–259.

A Modern Wizard. By Rodrigues Ottolengui. New York and London: G. P. Putnam's Sons, 1894. Pp. 434.

A Manual of Nursing in Pelvic Surgery. By Lewis S. McMurtry, A. M., M. D., Professor of Gynæcology in the Hospital College of Medicine, Louisville, Ky. Louisville: John P. Morton & Company, 1894. Pp. 6–7 to 92.

Hydatid Disease. Volume II. By the late John Davies Thomas, M. D. (Lond.), F. R. C. S. (Eng.), formerly Physician to the Adelaide Hospital, etc. A Collection of Papers on Hydatid Disease. Edited and arranged by Alfred Austin Lendow, M. D. (Lond.), etc. Sydney: L. Bruck, 1894. Pp. xii–3 to 166. [Price, 5*s*.]

A Contribution to the Pathology of Acne Varioliformis Hebræ. By John A. Fordyce, M. D. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases.*]

Memoir of the late Alfred Ludlow Carroll, M. D. By John W. S. Gouley, M. D.

Recurrent Appendicitis. Six Operations with Six Recoveries: Treatment for Acute Attack in Five Cases. By S. C. Gordon, M. D., Portland, Me. [Reprinted from the *Boston Medical and Surgical Journal.*]

Salines in Appendicitis. By S. C. Gordon, M. D., Portland, Me. [Reprinted from the *Boston Medical and Surgical Journal.*]

Sixty-seventh Annual Report of the Directors of the General Hospital Society of Connecticut. For the Year 1893.

Report of the Jefferson Medical College and Hospital. For the Year ending September 30, 1893.

Sixteenth Annual Report of the Connecticut State Board of Health, for the Year ending June 30, 1893, with the Registration Report for 1892 relating to Births, Marriages, Divorces, and Deaths.

Vexed Questions in the Bacteriology of Diphtheria. By Walter F. Chappell, M. D., New York.

Short Notes of Unusual Cases. By Walter F. Chappell, M. D., New York. [Reprinted from the *Annals of Ophthalmology and Otology.*]

The Prevention of Disease. By De Lancey Rochester, M. D., Buffalo, N. Y. [Reprinted from the *Buffalo Medical and Surgical Journal.*]

Two Cases of Congenital Hypertrophy of the Tongue. A Case of Tuberculosis of the Thyreoid Gland. By Walter F. Chappell, M. D., New York. [Reprinted from the *Manhattan Eye and Ear Hospital Reports.*]

Miscellany.

The Ohio State Medical Society will hold its forty-ninth annual meeting at Memorial Building, Zanesville, on May 16th, 17th, and 18th, under the presidency of Dr. N. P. Dandridge, of Cincinnati. The programme includes the following papers: The Physician, by Dr. Samuel Hart, of Marietta; The University and Medical Education, by Dr. D. S. Kellicott, of Columbus; The Prevention of Consumption, by Dr. C. O. Probst, of Columbus; Infection in Tuberculosis—Food Products, by Dr. H. H. Spiers, Ravenna; Is Consumption Curable? by Dr. R. E. Chambers, of Chandlersville (to be discussed by Dr. D. N. Kinsman, of Columbus, and Dr. A. J. Irwin, of Mansfield); La Grippe in the Differential Diagnosis of Scarlet Fever, Measles, and Rötheln, by Dr. James L. Tracy, of Toledo; Scarlatina, by Dr. Amelia J. Prior, of Cincinnati; Diphtheria, by Dr. J. S. Haldeman, of Zanesville (to be discussed by Dr. E. W. Mitchell, of Cincinnati); The Prevention of Pertussis, by Dr. George M. Clouse, of Columbus; Studies in the Ætiology of Small-pox, by Dr. J. C. Graham, of Columbus; The Value of Recent Therapeutic Literature, by Dr. W. C. Chapman, of Toledo; Certain Entozoa of the Dog and the Sheep, by Dr. D. S. Kellicott, of Columbus (to be discussed by Professor J. P. McMurrich, of Cincinnati); On imparting Rudimentary Knowledge to Lawyers, by Dr. Daniel Milliken, of Hamilton; Unjust Malpractice Suits—Causes and Prevention, by Dr. William Estep, of Loydsville; A Year's Operations for Appendicitis, by Dr. Dudley P. Allen, of Cleveland; A Case of Cirsoid Aneurysm, by Dr. W. D. Hamilton, of Columbus; A Case of Cirsoid Aneurysm, by Dr. L. S. Holcomb, of Pennsville; A Case of Aneurysm by Anastomosis, by Dr. J. C. Crossland, of Zanesville; Splenectomy, with the Report of a Successful Case, by Dr. W. J. Conklin, of Dayton; Nephrectomy for Tuberculosis, by Dr. R. Harvey Reed, of Columbus; Gastrostomy—a New Method, by Dr. M. Stamm, of Fremont; The Radical Cure of Hernia, by Dr. F. C. Larimore, of Mount Vernon (to be discussed by Dr. F. F. Lawrence, of Columbus); The Treatment of Uterine Fibroids as Indicated by their Natural History, by Dr. C. A. L. Reed, of Cincinnati; Some Remarks on the Total Extirpation of the Fibroid Uterus, with Illustrative Specimens, by Dr. Rufus B. Hall, of Cincinnati (to be discussed by Dr. T. A. Reamy, of Cincinnati); Total Extirpation of a Pregnant Myomatous Uterus, with Specimen, by Dr. C. N. Smith, of Toledo; Hysterorrhaphy the Cure for Retrodeviation of the Uterus, by Dr. F. D. Brandenburg, of Cleveland (to be discussed by Dr. D. Tod Gilliam, of Columbus); Practical Application of the Principles of Sterilization, by Dr. Hunter Robb, of Baltimore (to be discussed by Dr. J. F. Baldwin, of Columbus); Obstetrical Operations involving the Mutilation and Death of the Fœtus, by Dr. E. Gustav Zinke, of Cincinnati; The Treatment of Fractures in the Light of Advanced Histology and Pathology, by Dr. Donald Maclean, of Detroit (to be discussed by Dr. P. S. Connor, of Cincinnati); Studies in the Immunity and Treatment of a Specific Fever—*i. e.*, Hog Cholera, by Dr. D. N. Kinsman, of Columbus; Is there a Better Remedy in Cholera? by Dr. E. B. Fullerton, of Columbus (to be discussed by Dr. A. M. Bleile, of Columbus); The Rationale of Systematic Elimination in the Treatment of Typhoid Fever, by Dr. Robert Peter, of Canal Dover; Typhoid Fever, by Dr. John E. Woodbridge, of Youngstown; The Modern Treatment of Typhoid Fever, by Dr. Howard Jones, of Circleville (to be discussed by Dr. G. A. Collamore, of Toledo, and Dr. Edward Cass, of Dresden); Syphilitic Spinal Paralysis, by Dr. C. J. Aldrich, of Cleveland; Multiple Neuritis, by Dr. Joseph Eichberg, of Cincinnati; The Symptomatology of Hereditary Syphilis, by Dr. R. C. Longfellow, of Cincinnati; Acute and Chronic Diseases, by Dr. J. R. Black, of Newark; Pneumonia, by Dr. A. E. Bell, of Zanesville; The Phenomena of Fertilization and their Bearing on Heredity, by Dr. J. Playfair McMurrich, of Cincinnati; Diseases of a Reflex Nature arising from Pathological Conditions of the Uterus and Appendages, by Dr. William H. Humiston, of Cleveland; The Importance of Determining Reflex Irritation in Catarrhal Processes, by Dr. J. P. Sawyer, of Cleveland (to be discussed by Dr. T. M. Sabin, of Warren); The Effect of Obstructive Disease in the Upper Air-passages on the General Health, by Dr. J. A. Thompson, of Cincinnati; Headache, its Relation to Optical and Muscular Defects of the Eyes, by Dr. S. C. Ayres, of Cincinnati (to be discussed by Dr. A. R. Baker, of Cleveland); Sympathetic Ophthalmia, by Dr. B. F. Templeton, of Zanesville (to be discussed by Dr. H. P. Allen, of Columbus); Diseases of the Cornea in Childhood, by Dr. C. W. Tangeman, of Cincinnati (to be discussed by Dr. Francis Dowling, of Cincinnati); The Use of Plaster in Joint Diseases, by Dr. T. C. Hoover, of Columbus; Subcutaneous Osteotomy, with Cases—a New Osteotome, by Dr. Willis W. Hall, of Springfield (to be discussed by Dr. S. S. Thorn, of Toledo); Subluxation of the Knee, with Treatment, by Dr. S. L. McCurdy, of Dennison; Fractures of the External Condyle of the Humerus, by Dr. F. E. Bunts, of Cleveland (to be discussed by Dr. F. D. Bain, of Kenton); Practical Points in Ether Anæsthesia, by Dr. W. D. Porter, of Cincinnati; Rectal Abscess, by Dr. Auguste Rhu, of Marion; Trephining, with a Report of Cases, by Dr. Leonard Freeman, of Cincinnati (to be discussed by Dr. S. F. Forbes, of Toledo); Middle Florida as a Winter Resort for Invalids, by Dr. F. D. Case, of Ashtabula; Tonsillitis, by Dr. H. J. Noyes, of McConnellsville; A Case of Myxœdema, by Dr. E. M. Fitton, of Hamilton; Valvular Disease and Chronic Rheumatism, by Dr. W. W. Pennell, of Fredericktown; The Local Treatment of Cystitis, by Dr. G. W. Morehouse, of Sparta; and Cremation as a Means of Practical Sanitary Reform, by Dr. Charles P. King, of Newark.

The Association of American Physicians will hold its ninth annual meeting in Washington, in the Columbian University, on Tuesday, Wednesday, Thursday, and Friday, May 29th, 30th, and 31st, and June 1st, under the presidency of Dr. Reginald H. Fitz, of Boston, and in connection with the third Congress of American Physicians and Surgeons. Besides the president's address, the programme includes the following titles:

The Treatment of Certain Symptoms of Croupous Pneumonia, particularly in Adults, by Dr. Beverley Robinson, of New York; A Treatment of Typhoid Fever, by Dr. Samuel A. Fisk, of Denver; Six Cases of Traumatic Headache, by Dr. C. F. Folsom, of Boston; A Clinical Report of Two Cases of Raynaud's Disease, by Dr. Frederick P. Henry, of Philadelphia; Dr. S. C. Martin's Researches on the Bacteria of Vaccinia, by Dr. Harold C. Ernst, of Boston; Modification, Temporary and Permanent, of Physiological Characters of Bacteria in Mixed Cultures, by Dr. Theobald Smith, of Washington; The Effect of Various Metals on the Growth of Pathogenic Bacteria, by Dr. Meade Bolton, of Baltimore; Note on the Observation of Malarial Organisms in Connection with Typhoid Fever, by Dr. W. Gilman Thompson, of New York; Experiments in Artificial Melanosis, by Dr. George Dock, of Ann Arbor; Stomatitis Neurotica, by Dr. A. Jacobi, of New York; Tetany in America, by Dr. J. P. Crozer Griffith, of Philadelphia; Lead Palsy in Children, by Dr. Wharton Sinkler, of Philadelphia; A Study of the Temperature in Cerebral Apoplexy, by Dr. Charles L. Dana, of New York; The Mild Character and Diminished Prevalence of Syphilis and the Infrequency of Visceral Syphilis, by Dr. John H. Musser, of Philadelphia; Some Remarks on the Significance of Albumin and Casts, especially in those Past Middle Life, by Dr. Frederick C. Shattuck, of Boston; Experimental Phthisis in the Rabbit with Formation of Cavities: A Demonstration, by Dr. T. M. Prudden, of New York; A Report of the Ultimate Results obtained on Experimental Eye Tuberculosis by Tuberculin Treatment and Anti-tubercular Inoculation, by Dr. E. L. Trudeau, of Saranac Lake; Some of the Chemical and Bacteriological Characteristics of Milk, by Dr. Thomas M. Rotch, of Boston; The Chemical Products of the

Anaerobic Putrefaction of Pancreatic and Hepatic Tissues, and their Effects upon the Tests for Morphine, by Dr. Victor C. Vaughan, of Ann Arbor; Gastro-enteric Rheumatism, by Dr. H. M. Lyman, of Chicago; A Case of Osteomalacia, by Dr. George Dock, of Ann Arbor; A Case of Mitral Stenosis with great Hypertrophy of the Right Ventricle: Death from Hæmoptysis, by Dr. A. McPhedran, of Toronto; and A Case of Calculous Pyelitis with Invasion by the Bacillus Lactis Aerogenes, by Dr. J. H. Musser, of Philadelphia.

Tuberculin in the Food of Consumptive Patients.—The allegation has been made that the heat used in cooking tuberculous meat and in boiling or Pasteurizing milk does away with every element of danger by killing the microbes and their spores. Professor James Law, of Cornell University, has stated, however, in a recent number of the *Cornell Bulletin*, that the cooked meat and milk are still dangerous because of the chemical poisons secreted by the microbes, especially those in the tuberculin. Sterilization is not a restoration to a non-poisonous condition, for, though the possibility of inoculation is removed, the product is not rendered innocuous. The sterilization of Koch's tuberculin has not by any means rendered it safe and harmless. On the contrary, it invariably intensifies any existing tuberculous process, developing fever and general constitutional disorder. Hence, whenever tuberculin is present in meat or milk, it causes these foods to affect consumptive patients in the same manner. In Professor Law's experience with tuberculosis he has observed cases in which invalids drinking the milk of tuberculous cows suffered very obviously, but as soon as such milk was withheld there was a marked improvement. He noticed that calves sucking consumptive cows did badly and proved unthrifty, though they took all the milk furnished by their respective nurses, but, when weaned and fed on solid food, they thrived much better. He has followed such calves until they grew up and were slaughtered, and found in the post-mortem examinations that they bore old calcified tubercles pointing back to the time when they had sucked the diseased and poisonous milk. K. Yamagiva successfully inoculated guinea-pigs with tuberculosis and afterward administered tuberculin, and found that it so greatly hastened the onset of general tuberculosis that after a week tuberculous centers were found in the lymphatic glands, spleen, liver, and lungs. Human beings are much more susceptible than the guinea-pig to the tuberculin poisons. It may be safely held as proved by analogy, observation, and experiment that the soluble poisons of tuberculosis invariably operate by exaggerating any existing tuberculous process, and that blood and other animal fluids becoming charged with such poisons uniformly tend to further endanger the health and life of any patient who may consume them while suffering from tuberculosis. The germ, especially in the tubercle of this disease, which might have remained comparatively dormant and harmless in the absence of the poisoned meat and milk, is by these stimulated to a more deadly energy.

Hydrocele of the Tunica Vaginalis.—Differences not only in size but also in shape have been noticed in simple hydroceles of the tunica vaginalis. The manner in which the serous membrane is related to the testicle and epididymis in each patient would seem to account for the differences in form of the distended sac. From the study of many such cases, Dr. Joseph Griffiths, of the University of Cambridge (*Journal of Anatomy and Physiology*, April, 1894), concludes that in the adult the distended tunica vaginalis usually assumes either a spherical or an ovoidal shape. In the child the sac of the tunica vaginalis is almost always of a pyriform shape, with a slight constriction near the upper level of the testis. When this pyriform shape is found in the adult, it is due either to the persistence of the condition found in the child or to the incomplete obliteration of the lower end of the processus vaginalis and the occurrence of a free communication between its cavity and that of the tunica vaginalis. The bilocular form of this hydrocele occurs when the processus vaginalis remains unobliterated, being shut off, however, from the peritoneal cavity above, though still communicating with the tunica vaginalis by an opening of variable size, depending upon the degree of the constriction at the line of junction of the processus and the tunica vaginalis. A multilocular variety of this simple hydrocele is occasionally seen in which the locules arise either from bulgings of the serous membrane or from the formation of incomplete sæpta between opposed parts of the parietal and visceral layers.

The Transactions of the Pan-American Medical Congress.—The proceedings of the First Pan-American Medical Congress were compiled by the secretary general, Dr. Charles A. L. Reed, and transmitted to the Department of State in November, 1893. By a recent joint resolution of the Senate and House of Representatives the manuscript was transmitted to Congress and a concurrent resolution has been adopted directing the Public Printer to print the same. The manuscript is now in the office of the Public Printer and will be put to press at once under the supervision of the editorial committee, of which Professor John Guitéras, of Philadelphia, is chairman.

The Society of Medical Jurisprudence.—At the next meeting, on Monday evening, the 14th inst., Mr. William George Oppenheim, of the New York Bar, will read a paper entitled A Plea for a National Compulsory Sanitation Law.

The American Orthopædic Association.—The eighth annual meeting will be held at the Columbian University, Washington, on May 29th, 30th, and 31st and June 1st, under the presidency of Dr. A. M. Phelps, of New York, in addition to whose address the following papers will be read: The Treatment of Severe Forms of Clubfoot, by Mr. Edmond Owen, of London; Tarsoclasis for Clubfoot, Mr. Nicholas Grattan, of Cork; The Abuse of Phelps's Operation for Clubfoot, by Dr. James E. Moore, of Minneapolis; Phelps's Operation for Talipes Varo-equinus, by Dr. H. P. Kaptyn, of Abcoude, Holland; Phelps's Method for the Cure of Clubfoot in Adults, by Dr. William E. Wirt, of Cleveland; Phelps's Method of Treating Severe Forms of Clubfoot, by Dr. Cordua, of Hamburg, Germany; The Place of Traction in the Treatment of Clubfoot, by Dr. Newton M. Shaffer, of New York; Elastic Traction in the Immediate Treatment of Clubfoot, by Dr. Bernard Bartow, of Buffalo; Some Observations on the Anterior Transverse Arch of the Foot and its Obliteration as a Cause of Metatarsalgia, by Dr. Joel E. Goldthwait, of Boston; Final Results in One Hundred Cases of Operation for Deformities following Hip-joint Disease, by Dr. V. P. Gibney, of New York; The Treatment of Hip Disease and the Application of Lateral Traction, by Dr. Robert W. Lovett, of Boston; The Question of Priority in the Application of Lateral Traction to Relieve Intra-articular Pressure in Hip-joint Disease, The Presentation of New Knee and Ankle Splints, The New Improved Celluloid Corset, and An Original Operation for Wryneck, by Dr. A. M. Phelps, of New York; Blanchard's Hip Splint, by Dr. Wallace Blanchard, of Chicago; What Results should we try to Attain in the Treatment of Hip-joint Disease? by Dr. Reginald H. Sayre, of New York; Cases of Hoffa's Operation for Congenital Dislocation of the Hip Joint, by Dr. E. H. Bradford, of Boston; Lorenz's Operation for Congenital Dislocation of the Hip, by Dr. A. Lorenz, of Vienna; Congenital Dislocation of the Hip, by Dr. T. Halsted Myers, of New York; The Results in Talipes Varo-equinus after Phelps's Operation, and the Limits of Operative Treatment in Congenital Dislocation of the Hip, by Dr. Sigfred Levy, of Copenhagen; Congenital Dislocation of the Hip, by Dr. L. A. Weigel, of Rochester; Peculiar Nervous Symptoms occurring in Pott's Disease of the Spine, by Dr. Leroy W. Hubbard, of New York; Relief of the Spondylitic Spine from the Concussion of Walking, by Dr. John C. Schapps, of Brooklyn; Spondylitis, by Dr. A. J. Steele, of St. Louis; The Treatment of Old Neglected Cases of Deformity following Poliomyelitis, by Dr. S. L. McCurdy, of Dennison, Ohio; Observations on Rhachitic Distortions of the Neck of the Femur in Adolescence, and its Significance, by Dr. Royal Whitman, of New York; Infantile Apoplexy and Paralysis, and some of their Consequences, by Mr. W. J. Little, of England; The Ætiology of Deformities in Knee-joint Disease, by Dr. A. E. Hoadley, of Chicago; The Care of the Bony Frame in Infancy and Childhood, by Dr. J. B. Ransom, of Dannemora, N. Y.; Diseases of the Knee Joint, by Dr. J. D. Griffith, of Kansas City; Excision of the Knee for the Relief of Crippling from Infantile Paralysis, by Dr. ApMorgan Vance, of Louisville; The Treatment of Lateral Rotary Curvature of the Spine by Non-restorative and Developmental Methods, by Dr. B. E. McKenzie, of Toronto; The Improved Machine for Treating Scoliosis, by Dr. Max Schede, of Hamburg, Germany; Scoliosis, by Dr. A. B. Hosmer, of Chicago; Excision of the Sac in Spina Bifida, by Dr. De Forest Willard, of Philadelphia; On the Application of the Principle of Extension in the Treatment of Wryneck, by Mr. William Adams and Mr. R. W. de Sante, of London; The Lorenz Osteoclast, by Dr. F. S. Coolridge, of Chicago; A Case of Ankylosis of the Jaw in a Child—Resection and Recovery with Good Motion, by Dr. Dillon Brown, of New York; Excision of the Wrist Joint by a New Method, by Herman Mynter, of Buffalo; Disease of the Shoulder Joint, by Dr. W. R. Townsend, of New York; Fixation and Traction in the Treatment of Fractures into Joints, by Dr. Ansel G. Cook, of Hartford; and papers by Dr. W. J. Taylor, of Philadelphia, Dr. W. O. Plimpton, of New York, and Dr. James Kerr, of Washington (titles to be announced).

Subjects for Discussion.—Flat-foot: Its Ætiology and the Mechanism of its Production, by Dr. Newton M. Shaffer, of New York; Pathology, Prognosis, and Mechanical and Surgical Treatment, by Dr. T. C. Morton, of Philadelphia; Gymnastic Treatment, by Dr. H. Augustus Wilson, of Philadelphia. Dr. Royal Whitman, of New York, Dr. Sidney Roberts, of Philadelphia, Dr. J. D. Griffith, of Kansas City, Dr. Roswell Park, of Buffalo, and others will take part in the discussion. Rhachitic Deformities: Ætiology, Clinical History, and Lesions, by Dr. A. Jacobi, of New York; Its Various Manifestations, Diagnosis, Differential Diagnosis, and Prognosis, by Dr. Benjamin Lee, of Philadelphia; Mechanical and Constitutional Treatment, by Dr. Samuel Ketch, of New York; and Operative Treatment, by Dr. De Forest Willard, of Philadelphia; Paralytic Deformities: Ætiology, Clinical History, and Pathological Conditions producing them, by Dr. E. H. Bradford, of Boston; Varieties, Diagnosis, Differential Diagnosis, and Prognosis, by Dr. E. G. Brackett, of Boston; Mechanical Treatment, by Dr. John Ridlon, of Chicago, and Dr. Joel Goldthwait, of Boston; and Operative Treatment of Paralytic and Rhachitic Deformities, by Dr. De Forest Willard, of Philadelphia.

The Effect of Limewater on the Urine.—As limewater is almost a necessary part of the liquid diet of illness and infancy, it is very important that all its effects upon the system should be known. That the urine is rendered alkaline by an excess of limewater in the food is a frequent clinical observation, but the nature of this alkalinity has only recently been studied. The mother of an infant noticed an ammoniacal odor coming from its urine-moistened linen, for which the physician could find no other cause than the limewater which had been administered freely in the milk for some months. As a test case, two teaspoonfuls of a very thick cream of lime were well distributed in the milk and other food of a boy, four years old. On the evening of the third day, the child's urine gave off free ammonia, and had all the characteristic reactions of a dilute solution of calcium carbonate. There was no digestive disturbance.

The test was made by Dr. John J. Abel, of the Johns Hopkins Medical School, whose account appears in the *Johns Hopkins Hospital Bulletin* for April. He further experimented upon healthy animals, and found that when slaked lime was mixed with the food of dogs fed on bone-free meat their urine became strongly alkaline and spontaneously gave off carbon dioxide and ammonia. It contained, however, absolutely less ammonia in the twenty-four hours than normal urine. It always contained a calcium salt in solution which was not bicarbonate of calcium, and which decomposed with precipitation of calcium carbonate when the urine was allowed to stand. This lime urine exhibited all the characteristics of a weak aqueous solution of calcium carbonate, and a white powder was isolated from it which behaved in every way like synthetically prepared calcium carbamate, except that it gave less accurate results when subjected to quantitative analysis. Human urine was found to react exactly like that of the dog, when large quantities of lime were taken in the food, and it likewise contained calcium carbamate. Carbamic acid, which is believed to be one of the principal immediate precursors of urea, combines with the lime, and the human body probably avails itself of the readily soluble carbamate of calcium to eliminate an excess of lime that has been absorbed. It is an interesting fact that so simple a drug as limewater may cause such hitherto unsuspected changes in the urine.

Bacteriological Examinations in Cases of so-called Membranous Croup.—The following report has been made to the president of the Health Department of the City of New York by Dr. Hermann M. Biggs, pathologist and director of the bacteriological laboratory:

Some months ago I had the honor to present a communication to the board of health directing attention to the results obtained in the bacteriological examination of a considerable number of cases of so-called membranous croup. In that communication it was shown that in a large proportion of these cases bacteriological examination disclosed the presence of the Klebs-Loeffler bacillus of diphtheria, proving that these were really cases of true diphtheria of the larynx. It was further shown by the investigation of the clinical histories of these cases that in many instances there was satisfactory proof that they were cases of diphtheria in which previous and subsequent infection could be traced. Since the former report a large number of further observations has been made which, I believe, justify this department in considering so-called membranous croup as laryngeal diphtheria.

Two hundred and eighty-six cases of so-called membranous croup in children have been examined bacteriologically. In 229 of these cases the characteristic Loeffler (diphtheria) bacilli were found, and these cases were thus proved to be true diphtheria. Of these 229 cases, 167 showed no false membrane or exudate above the larynx, while in the remaining 62, although the larynx was mainly involved, there was also some false membrane present on the tonsils or in the pharynx. Of the 57 cases examined in which no Loeffler bacilli were found, in 17 the cultures were unsatisfactory, leaving the bacteriological diagnosis in these cases doubtful. Of the 40 cases remaining in which no Loeffler bacilli were found, in 27 the disease was confined to the larynx or bronchi, and in 13 there was also more or less exudate or false membrane present on the tonsils or in the pharynx.

It has been shown, therefore, by these examinations that about eighty per cent. of the cases of so-called membranous croup in children which have been subjected to bacteriological examination in the laboratory of the Health Department during the past ten months were cases of *true diphtheria*, and of the remaining twenty per cent., six per cent. were doubtful, and only fourteen per cent. were undoubtedly not diphtheria. Further investigations have also shown that cases of pharyngeal diphtheria frequently precede or follow these cases of croup.

Inasmuch, therefore, as so-called membranous croup has been clinically separated from diphtheria, and as cases of this disease are not usually considered as laryngeal diphtheria, and are not reported to the department as diphtheria, I would respectfully recommend that so-called membranous croup be regarded as pharyngeal diphtheria, and be included in the list of the contagious diseases concerning which reports are required from physicians of this city.

The American Association of Genito-urinary Surgeons.—The eighth annual meeting will be held at the Shoreham Hotel, Washington, on May 29th, 30th, and 31st and June 1st, under the presidency of Dr. George Chismore, of San Francisco. The programme includes the following papers: A Modification of Bigelow's Operation for Stone in the Bladder, designed to meet Cases in which the Prostate is Enlarged, by Dr. George Chismore, of San Francisco; The Treatment of the Hypertrophied Prostate, by Dr. J. William White, of Philadelphia; A Suggestion as to the Best Method of Removing Fibro-adenomatous Growths from the Prostate, by Dr. Samuel Alexander, of New York; A Report of some Cases of Rupture of the Urethra, by Dr. Francis S. Watson, of Boston; Remarks on the Treatment of Cystitis, by Dr. Gardner W. Allen, of Boston; The Treatment of Imperfect Transition of the Testes, by Dr. Samuel Alexander, of New York; Aero-urethroscopy with a New Instrument, by Dr. William K. Otis, of New York; New Instruments and Apparatus, by Dr. F. Tilden Brown, of New York; Stone in the Bladder—Choice of Operation, by Dr. William H. Hingston, of Montreal; Urine Leakage and Stricture Formation, by Dr. John P. Bryson, of St. Louis; The Possibility of Overcoming Permanent Stricture of the Deep Urethra without Resort to External Urethrotomy, by Dr. J. Blake White, of New York; The Surgical Aspect of Impotence, by Dr. Edward R. Palmer, of Louisville; Epithelioma of the Penis, by Dr. Edward Martin, of Philadelphia; The Hygiene of Circumcision, by Dr. W. Frank Glenn, of Nashville; The Question of Surgical Interference in Tuberculous Kidney, by Dr. John P. Bryson, of St. Louis; A Brief Report of a Case of Cystitis and Pyelonephritis due to the Colon Bacillus, requiring Nephrectomy, by Dr. F. Tilden Brown, of New York; A Report on Irrigation of the Bladder and Urethra without a Catheter, by Dr. George F. Brewer, of New York; Catheterism of the Ureters in the Male, by Dr. William K. Otis, of New York; Exhibition of a Calculus from the Kidney, by Dr. Edmund E. King, of Toronto; Some Infrequent Symptoms of Disease of the Urinary Tract, by Dr. Alexander W. Stein, of New York; The Relationship of Syphilis to Stricture of the Rectum, by Dr. Robert W. Taylor, of New York; Two Cases of Syphilis having a Bearing on the Question of the Period during which the Disease is Communicable, by Dr. James Bell, of Montreal; and Excision of the Initial Lesion, by Dr. Edmund E. King, of Toronto. In addition there will be discussions on Nephritis in its Surgical Aspects (to be opened by Dr. Edward L. Keyes, of New York), and on the Bacteriology of Nephritis (to be opened by Dr. George M. Sternberg, of the army).

Pharmacy as a Profession.—This was made the subject of a valedictory address to the class of 1894 of the Philadelphia College of Pharmacy, by Samuel P. Sadtler, Ph. D., the professor of chemistry, which is published in the May number of the *American Journal of Pharmacy.* In the course of his remarks Professor Sadtler said:

"Another of the drawbacks to the proper recognition of pharmacy as a profession is the comparison so often drawn between it and the related profession of medicine, and drawn, I need hardly say, in most cases to the disadvantage of the former. It is not alone drawn by the doctor, who from the time he leaves the medical college calmly draws a line between himself and the 'laity,' as he calls the rest of the world. This superiority of the medical profession is too often conceded as a matter of course by the pharmacist, who feels the necessity of gaining the good will of the medical profession living in his neighborhood as a question of business. Is it any wonder then that the public take him at his own estimate, and grow accustomed to give a respect to the one profession that they deny to the other? This difference in valuation is only encouraged when the pharmacist proceeds to demonstrate his belief in it by taking up medical studies, even after years of practical business life, and adding the medical degree to that of graduate in pharmacy. I do not wish to be misunderstood here. Many young men enter upon the study of pharmacy, and pursue it diligently, with the full intention from the beginning of following it by studies in medicine. For such a plan I have nothing but commendation. I have repeatedly heard medical men, who had pursued this plan, acknowledge the invaluable aid that the thorough grounding in a knowledge of drugs and medicines and their preparation acquired in a college of pharmacy gave them in the after practice of medicine. But can not the graduate in pharmacy, who has had no such plan of study, who has only started out to acquire a pharmaceutical education, feel that he has a worthy profession before him, if he will but strive to make himself worthy of it? He has had an insight during his college years into the methods of work in chemistry, both analytical and synthetical, in operative pharmacy, the field of which is becoming wider every day, in microscopical study of plant tissue and drug structure. Is there, then, nothing that promises results for him in all this, results that will bring him both pecuniary reward and reputation?"

"Quacks."—The *British Medical Journal* quotes from the *Pall Mall Gazette* the following supposed correspondence between Lady Morgan and the late Dr. Jenner:

"I've dispatched, dear Lady Morgan, this scrap of a letter
To say that Miss Charlotte is certainly better.
A regular doctor no longer she lacks,
And therefore I've sent her a couple of quacks."
(With the note came a couple of wild ducks.)

Lady Morgan's reply:

"Yes, 'twas politic truly, my very good friend,
Thus a couple of quacks your patient to send,
Since there's nothing so likely as quacks, it is plain,
To make work for a regular doctor again."

Senecio Jacobæa as an Emmenagogue.—In the *British Medical Journal* for March 31st Dr. William Murrell gives his experience in the use of this plant, the common ragwort or life-root, as an emmenagogue. He began with half-drachm doses of a one-to-ten tincture, in water, three times a day, and, experimenting on himself to ascertain the quantity that it was safe to take, gradually increased the dose to half an ounce four times a day for a month, without producing any effect. He then began giving it to women suffering from menstrual derangements, and found that it answered well in cases of amenorrhœa. His use of the plant was not limited to the tincture; in many cases he employed a one-to-one fluid extract, and he thinks that this fluid extract may sometimes have been prepared from *Senecio aureus* (an American species); but he does not think that the substitution of one species for the other is an important matter, as they both seem to have the same action. He has also used with good results the active principle, senecin, a dark, resinous-looking substance, the minimum dose of which is two grains three times a day. He has found senecio useful in cases in which menstruation, having been performed regularly for some years, has suddenly been suspended as the result of exposure to cold. In the majority of cases the function is not re established until the drug has been taken for ten days or a fortnight; but in one case, after two periods had been missed, the patient became unwell after taking six two-drachm doses. As a rule, only a drachm, three times a day, was given to begin with, and the dose was increased gradually; but the author says that it is perfectly safe to begin with two-drachm doses of the tincture or twenty-minim doses of the fluid extract four times a day. These preparations, he says, are taken without difficulty, and do not cause either purging or vomiting. In some cases in which the amenorrhœa was associated with decided anæmia the drug failed. In some of these cases menstruation was restored by giving iron, but when that drug failed senecio answered well. Sometimes senecio is useful in cases in which menstruation has never been established. Dr. Murrell is satisfied that senecio not only hastens the occurrence of menstruation, but also increases the flow. In many cases it relieves the accompanying pain and frequently the headache. In one case a profuse leucorrhœa of many months' duration disappeared coincidently with the administration of the drug. The author has very little doubt that senecio deserves to rank with permanganate of potassium and binoxide of manganese as an emmenagogue.

Secondary Fever in Scarlatina without Local Complications.—In the April number of the *Quarterly Medical Journal for Yorkshire and Adjoining Counties*, England, Dr. E. Wearne Clarke relates the case of a little girl, seven years old, who was attacked with scarlet fever of moderate severity presenting at the outset the ordinary features. The temperature rose rapidly to 104·2°, the rash was generalized and tolerably profuse, and the sore throat was of very moderate intensity. There was a certain amount of mild delirium at night. The rash began to fade on the fourth day of observation and simultaneously the temperature fell to 100·8°. Two days later it rose again rapidly to 102·8°, and remained elevated for ten days, ranging between 100° and 101° in the morning and between 102° and 102·8° in the evening most of that time, the maximum being usually attained at or soon after six o'clock in the afternoon. On the seventh day of this renewed fever, at 5.55 P. M., when the temperature was 101·8° and apparently tending toward the usual evening rise, five grains of antipyrine were given and a little later a cold pack was administered. At ten o'clock the temperature was 100·8° and at four o'clock in the morning it was 98·2°. By 1·15 P. M., however, it had risen to 101°, and at 6 P. M. it was 100·8°. The next morning it was 99·4°, and rose to 100·8° in the evening. A like rise occurred on the following evening, and after that there was a fall to 98°, with never again any elevation. All this time desquamation was proceeding rapidly, and no local complication that could account for the rise of temperature was observed. In spite of the fever, the child's general condition was good; the urine was abundant throughout and contained no albumin. The subsequent progress of the case was favorable. Dr. Clarke is inclined to think, with Bouveret, that in such cases the continuance of fever is due to the action of a toxine of scarlatinal origin, probably producing a disturbance of the nervous centers. The article is illustrated with a temperature chart.

Ether as an Anæsthetic.—In the March number of the *Australasian Medical Gazette* there is an editorial article suggested, the writer says, by certain recent investigations as to the physiological action of chloroform, with deductions as to the precautions to be taken to avoid disaster from its use as an anæsthetic. The writer takes the ground that, while such experimental investigations may serve to explain how disasters and narrow escapes are brought about, it is to be feared that no such practical result has ensued as a diminution of the mortality attending chloroform inhalation. It has lately been declared by a Melbourne physician that the death-rate in Victoria from snake-bite is smaller than that in Melbourne alone from chloroform inhalation, and some go so far as to say that in cases where death has occurred from the inhalation of chloroform, the administrator should be put upon trial for malpractice or manslaughter. Although the writer does not indorse such extreme views, he certainly thinks it strange that the medical profession at large hesitates to recommend the substitution of ether for chloroform as the anæsthetic for general use. Accidents with ether are very seldom heard of, and the purity of that drug may readily be ascertained by a competent analyst, whereas the deadly impurities of chloroform baffle analysts and require the aid of the physiological chemist for their detection. In Australia the experience of those who use ether most teaches that very few patients are unsuitable subjects for its administration, and it is believed that its after-effects are neither so serious nor so unpleasant as to justify the use of a drug which, even in skilled hands, is so unsafe as chloroform, simply because the latter is less unpleasant to take and possibly more pleasant to recover from. In conclusion, the writer says that at the recent intercolonial congress much was said in defense of chloroform, and he asks if this fact was an illustration of the proverb *qui s'excuse s'accuse.*

Lawsonia Inermis.—In the April number of the *Archives de médecine et de pharmacie militaires* M. Ehrmann, a military pharmacist, publishes a study of this plant, the *hanneh* of the Arabs, who look upon it as a panacea. The author briefly enumerates the uses of the plant in Arabic medicine. Fissures are treated with a mixture of powdered lawsonia and powdered alum. Chancres and other ulcerations are covered with the powdered plant, and the itch is treated in the same way. The drug is employed topically as a remedy for engorgement of the lower limbs complicated with ulceration. As an application to wounds it is considered tonic and astringent. Wounds with great loss of substance are treated by means of quantities of the plant, and the dressing is renewed once in three days. Contused wounds are treated with the leaves beaten and moistened with a little water. Migraine is treated with poultices containing the seeds and black anise. Diarrhœa is cured with a weak decoction of the plant. The flowers, in infusion, are remedial in migraine and in bruises; a perfumed oil prepared from them is used as a cosmetic. An Arabian remedy for sterility consists in smelling of the fresh flowers. A few leaves of the plant cast into a cup of boiling water form a drink which is believed to ward off all the unpleasant consequences of abortion. The bark, in decoction, is used for jaundice, inflammation of the liver, calculous affections, leprosy, and diseases of the spinal cord. The fruit is considered emmenagogue.

Original Communications.

FISH BONES IN THE THROAT,

AND WHAT THEY SUGGEST CONCERNING DEGLUTITION.*

By ADOLPH RUPP, M.D.

I. *Frequency and Diagnosis.*—Some authors who have written on foreign bodies in the throat have said nothing concerning the question, How came those foreign bodies to be lodged at or in the particular places where they are found? Others have given only a partial and inadequate answer, based on reasoning of secondary importance at best, and which, in some respects, implies a misconception of the anatomy and physiology of the throat.

In this paper I do not propose to discuss those substances which give rise to obstructive symptoms on account of their bulk, but only of fish bones and similar sharp-pointed and slender substances, such as pins and needles, splinters of wood, etc.

My reason for limiting the discussion to these substances is that they usually have the quality of staying where they become fixed or lodged, but more particularly because they lend themselves very well in the way of illustration for answering the question, How came these foreign bodies to be lodged or fixed in or at the particular places where they are found? The answer to this question involves problems of deglutition, as well as secondary questions of pathology, anatomical peculiarities, and personal habits. Foreign bodies—fish bones, needles, etc.—so lodged in the throat as to demand surgical assistance in their removal are, comparatively speaking, very rare accidents. During over one years' service in the throat and ear class of the Northern Dispensary of this city, during the years 1881 and 1882, I saw only one case—and then the fish bone was as much in the larynx as in the pharynx. In private practice during a period of thirteen years, I removed four fish bones from the throats of as many patients. At the New York Eye and Ear Infirmary during five years (1885, 1887, 1888, 1889, and 1890) seven thousand eight hundred and forty patients applied at the Throat Department for treatment. None of these patients had any foreign body in the pharynx, palate, fauces, or tonsils—that is to say, in the throat. Fifteen of these patients had foreign bodies in the larynx, and in sixteen patients foreign bodies were found in the nasal cavities. At the clinic of Professor Jurasz (1), at Heidelberg, during a period of about seven years and a half, four thousand and forty-eight patients were treated for the various troubles of the upper respiratory organs. Nineteen of these patients, ranging in age from four years to sixty-eight years, applied to have foreign bodies taken from their throats; but in only four of the throats could a foreign body be found after careful examination. During a period of ten years, Schäffer (2), of Bremen, met with foreign bodies in the throat only seven times in as many patients, and six times the foreign bodies were fish bones.

Although not a frequent it is a common experience to be called on to remove foreign bodies from the throats of patients—children as well as adults—when really none are present or discoverable. In cases where no foreign bodies are present the pain and discomfort will be found to be due to local trouble of some kind. These patients are not necessarily hysterical and neurasthenic people. In my experience they have been people addicted to tobacco and alcohol excesses. A history of foreign body may or may not be given when a foreign body is or is not present. Whatever the case may be, a careful and thorough examination should always be made. I have been called three times to treat children who it was supposed had pins and bones in their throats. In one of these cases the child, nine months old, was supposed to have swallowed an open diaper pin. The pin had been mislaid by the mother, and was afterward found in a safe place—not in the child. Another child, not quite a year old, swallowed part of the spinal column of a herring. This causing choking symptoms, the father looked for the trouble in the throat, and luckily pushed the vertebra down the child's œsophagus. These bones were passed per anum next day. The third case was one of fright and suspicion and developed nothing more. Cases in children, easy enough to diagnosticate and easy enough to treat when due care is exercised, may lead to grave results if handled carelessly or in ignorance of a practical knowledge of this subject. Thus Walter F. Atlee, M. D., tells of the case of a seventeen-months-old child that lost its life, he reports, because "a well-known and experienced physician" made only an imperfect examination, and treated the child for a simple angina by giving a harmless chlorate-of-potassium mixture. In the course of four or five days the symptoms became alarming, and Dr. Atlee was called in to see the case. He found, on passing his finger into the child's mouth and throat, a pin firmly fixed between the right faucial pillar by one end, and the other end in the posterior wall of the pharynx. The child died the day after Dr. Atlee removed the pin, and five or six days after the pin had been swallowed.

However, cases occur, now and then, which foil the best efforts of the best-equipped laryngoscopists. O. Chiari (4), (Vienna), narrates the case of a man who swallowed a piece of wooden toothpick which gave rise to swelling of the left half of the velum. After a good deal of trouble and careful search he gave up the hunt, having been unsuccessful. The next day the patient coughed out the splinter spontaneously. Patients have been known to have gone to as many as half a dozen doctors before the site of a foreign body was located. Schäffer tells of such an instance in his experience, and where the foreign body was in one of the vallecules. The following case of an eighteen-months-old child, reported by George White, M. D. (5), (Chicago), is interesting in this respect, and again because of the length of time the pin remained in the child's throat without doing any serious damage—differing in this respect from the case reported by Atlee and just quoted. Several physicians successively had been called in to see the case before Dr. White discovered the pin and its location. Œdema of the pharynx had been made the excuse for failure in finding and locating the pin. In this case the pin had been in the child's throat about eight months when Dr. White was called in to see the case. On depressing the child's tongue with his finger, the little one retched, and, looking into the throat at the same time, he saw the pin lying across the pharynx just behind the tonsils. All these cases show how little the mere history of a case is to be depended on, one way or the other. The careful examination of the throat by means of well-directed light is of the utmost importance. And no matter how good the light may be in which the throat is examined, if the examining physician or surgeon has no practical knowledge of the throat, the chances are he will fail in his search. A number of first-rate authorities recommend examining the throat and its different localities by means of a sound. And the use of the finger is also recommended. What has been said in reference to good light and visual examination holds good for the *tactus eruditus.* Dr. Atlee, who has just been quoted, confirms this by writing: "I heard even Nélaton say that in a certain case, after pushing the finger deeply into the pharynx and feeling a small resisting body, he made several attempts to seize it with a forceps before discovering it to be the great horn of the hyoid bone." There are a number of other points in the throat which the unknowing touch might mistake for a foreign body. Roe quotes Cohen as saying that the posterior faucial pillar—its border—might be mistaken for a fish bone. In searching for foreign bodies, when they can not be seen after careful visual inspection, the naso-pharynx may be explored by the finger; and, when possible, a rhinoscopic and post-rhinoscopic examination should be made. The foreign body may have been swallowed and then vomited, and so been forced into the naso-pharynx or into the nose. Or it may have been worked into the post-nasal space by spasmodic efforts on the part of the pharynx to get rid of it. Moreover, especially in the case of fish bones, more than one may be present; and concerning this possibility Sir M. Mackenzie (7) relates the following instructive instance which occurred in his own experience: "An eminent Glasgow surgeon consulted me on account of a fish bone which had become lodged in his throat three or four months previously. I succeeded in removing a fish bone from the lower part of the pharynx. I told him 'he might feel the sensation for a day or two, but there could be nothing more in the throat.' Two days afterward the gentleman returned, saying that there was another bone near the site of the one I had removed, and making an examination I found that his sensations were accurate, and that a second bone was lodged in the throat at the spot indicated. The removal of the bone removed all unpleasant sensations. Between the removal of the first and the second bone no fish had been eaten." In my five cases—the reports of which will now be given—the diagnoses were readily made by means of reflected light and sight. In only one case was it necessary to use the laryngeal mirror; but the laryngeal and post-nasal mirrors were used in all cases. Three of the patients were males and two females. None of them exhibited any physical abnormity in the mouth, fauces, pharynx, or larynx, nor were any of them bolters of food.

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* Read before the Laryngological Section of the New York Academy of Medicine, March 28, 1894.

Case I. *Fish Bone in Right Tonsil Six Years—the Cause of Recurrent Tonsillitis, etc.*—George M., aged thirty years, came under my care for follicular amygdalitis. Had many attacks during recent years. Complained that the right tonsil always pained him more or less. The right tonsil was larger than the left, and cheesy concretions in the lacunæ more marked. In cleaning away the cheesy masses from the right tonsil the blunt hook rasped against a hard substance which was supposed to be a calculus. Finally this rough and hard substance was removed from about the center of the tonsil and proved to be a short, thick piece of fish bone about two fifths of an inch long. The patient stated the bone must have been lodged in the tonsil six years. He had consulted a doctor in Scotland on account of pain in the throat after having eaten fish six years ago. It is now (1894) four years since the bone was removed, and there has been no recurrence of amygdalitis.

Case II.—A girl, aged sixteen years, while eating fish suddenly felt a severe pain in the throat, and, the pain continuing, she sought medical aid. A fish bone an inch and a half long was taken from the right tonsil. The bone had penetrated the upper back portion of the tonsil from above and behind, allowing the free end to prod the soft palate. The bone stuck in the tonsil half an inch; a slight amount of bleeding followed its removal, and with the bone all pain disappeared.

Case III.—A strong, healthy woman while eating fish was suddenly taken with severe spasmodic coughing and vomiting. I was called to see this woman in great haste. In this case a long, slender fish bone had penetrated the posterior faucial pillar (left), the longer and thinner end swinging against the posterior pharyngeal wall, the other thicker end pressing now against the tonsil, now against the base of the tongue. Every time the woman attempted to talk or swallow an attack of coughing and vomiting ensued, and to such an extent as to make her turn blue in the face. The bone was about an inch and three quarters long. It was easily removed with an ordinary dressing forceps, and with its removal the cough and vomiting ceased.

Case IV.—A boy, aged eight years, was suddenly taken with pain in the throat while eating fish, and in such a way that he could neither swallow nor cry without aggravating the pain. This fish bone was fixed in the left lateral wall of the pharynx by one end; the other penetrated the left lateral and middle glosso-epiglottic folds. In removing this bone it was necessary to push it toward the median line of the throat to free it from the lateral pharyngeal wall, and then it was easily pulled out. This was done with a long dressing forceps, the base of the tongue being depressed while the tongue was pulled out by its tip. Complete relief followed the removal of the bone and no bad results followed.

Case V is the dispensary case already alluded to, and was also examined by my colleague, Dr. George T. Jackson. In this case the bone was very firmly fixed in the right aryepiglottic ligament. About a sixth or an eighth of an inch of it protruded into the pharynx. For want of a good instrument I failed to remove it. The cannular (laryngeal) forceps that was used let go its hold when traction was made. What subsequently became of the bone and the patient I do not know.

Since these fish bones were removed from their throats, these people have eaten fish often without a recurrence of the accidents for which they were treated. They had often eaten fish before that time with impunity. In view of some of the notions taught concerning the lodgment of fish bones in the throat these facts are important.

II. *Reasons for Lodgment or Fixation.*—The cases just narrated seemed to me worth recording, and as being a not uninstructive addition to the many already recorded by a number of laryngologists and other physicians and surgeons. While studying cases of this kind—where fish bones, pins, needles, etc., have become lodged or fixed in the pharynx or throat—ideas are apt to suggest themselves that will not harmonize with the teachings often found in laryngological literature respecting the reasons given for accounting for the impaction of foreign bodies in the throat. Besides, such cases are involuntary experiments which illustrate some of the phases of mastication, and which have some influence in deciding the correctness of any theory of deglutition.

George Henry Lewes defines a scientific explanation as being the discovery of those intermediate facts not obvious which link together the obvious phenomena. Now, if we go to our laryngological treatises and text-books, we will look in vain for any scientific explanation as to why these foreign bodies became lodged in the particular localities of the throat where they are found. Take, for instance, Dr. John O. Roe's excellent *résumé* of the literature of foreign bodies in the throat, and what do we find? In the first place, we are made to infer that the pharynx is a very imperfect organ, since we are told that the natural irregularities of the pharynx tend to the arrest of the different substances that must pass through it in order to reach the stomach, etc. Other writers tell us a similar story. Such is the primary alleged fact. Then we are told that the particular location in or at which the foreign body is caught depends on the anatomical structure of the locality and on the shape, size, and consistence of the foreign body. Thin pointed bodies, it is said, are apter to stick into or become lodged between the pillars of the fauces and tonsils, or in the glosso-epiglottic folds; although, it is further remarked, they may be arrested in any portion of the pharynx. All these assertions are obvious, but they explain nothing, and remain to be explained. When we are told that pathological conditions influence the deposition and fixation of foreign bodies, we are nearing an explanation. But to be told that bad teeth, inflammatory diseases of the mouth, syphilitic local processes, growths in and around the throat, spasms and palsies, etc., are causes of deposition and fixation of foreign bodies in the throat, a scientific explanation is not given us by so doing. This is but indicating some of the conditions favoring such accidents, important of course, but not essential. The same holds true for personal carelessness, hurried eating, etc. Looking into the large number of cases reported by many medical men, we do not find the conclusion forced on us that careless or reckless people, or those who bolt their food, are those particularly afflicted with foreign bodies in the throat. I knew a dressmaker who often went to bed with dozens of pins in her mouth (as she expressed it), and who always awoke in the morning without having got any of them fixed in her throat. She, in a long life, was never bothered by any pin or needle getting into her throat. I know a half dozen carpet-layers and upholsterers, whose work obliges them to keep their mouths full of tacks for hours at a time, and neither are they bothered by tacks getting into their throats and becoming fixed there. Why? Just because the mouth, fauces, and pharynx are the perfect, exact, and wonderful organs they are. In this connection it may not be uninteresting to recall Ombani's experiments, with twelve young sucking animals (twelve kittens and two rabbits). Ombani forced these animals to swallow a hundred and twenty-seven needles and pins. The number swallowed by each animal varied from one to fifty-eight. Deglutition took place with ease, provided the needles or pins were placed on the tongue longitudinally and the mouth was kept shut. A hundred and ten needles passed away through the anus, one needle was found in the rectum above the sphincter, one transfixed the rectum, one was stuck fast in the walls of the stomach, and two were found in the appendix or cæcum. Three animals, after they had been made to swallow needles, were given emetics. Two of these animals vomited needles. In all three, needles were found transfixing the walls of the stomach. Such is quite a good showing for an apparatus with a bad reputation.

If we turn to anatomists and physiologists for an answer to the question, Why are fish bones, needles, and such similar foreign bodies found caught at or in the particular localities where they are found? they will not give us a direct or ready-made reply. It is easy to say that a foreign body gets where it is found by being swallowed; but so saying is only stating the problem in another way. This problem must take into account two processes: First, mastication, and second, deglutition. Under ordinary or normal conditions the tongue, cheeks, and teeth, in harmony with the jaw muscles and salivary glands, are sensitive to such a degree and their working qualities so well arranged and managed that the bolus is not transferred to the throat until it is properly prepared for propulsion downward. For mastication as well as for deglutition the tongue is the chief active factor. Taking physiologists together, we do not find them unanimous regarding all the details concerning the mechanism of deglutition. Whichever view be adopted, it does not seem irrational to assume that the tongue, after doing its share in the work of mastication and forming the bolus, gives the bolus a twist as it shoves or propels it down through the pharynx. It does not seem difficult, from its complicated anatomy and the multiplicity of its many possible movements, to suppose this to be the case—that is, to initiate the deglutitory movement with a screw-like motion or gyration, a movement which it would seem must facilitate the passage of the bolus, and which at the same time would lend force and expedition to the other deglutitory process acting on the down-speeding bolus. The conformation of the pharynx during deglutition would seem to favor this view. The pharynx is funnel-shaped; and we know that fluid forced down a funnel gyrates. Then, too, it may be asked, May not that force, or one similar to what gunners call "windage," but conformant to the organic conditions of the pharynx, etc., be at work here and aid in the gyratory movement of the bolus through the pharynx? We all know that it is easier to force a probe through a solid by pushing it with a rotatory movement; and we also know that it is easier to pull a plug from its place of fixture by adding rotation to the pulling force. These instances are, of course, only analogies, and prove nothing positively; but they indicate possibilities. We all know by experience that we talk faster than the clock ticks, and Kronecker and Meltzer have, by means of ingenious mechanical contrivances, demonstrated, that we swallow much more quickly than we talk—that is, we swallow at the rate of about an inch in a hundredth of a second. Deglutition is in the dark in more senses than one. And, besides, it is no easy matter to observe all that occurs, and how it all occurs, in so complicated and complex a process as deglutition is—everything taking place with almost "lightning rapidity." If, however, the gyrating or screw-like movement of the "shooting" bolus could be proved experimentally—that is, if this idea could be made a fact—the explanation of the fixation and impaction of foreign bodies like fish bones, etc., in the throat could be more easily explained than can be done by assuming that the food goes down in a straight line. It seems easier to conceive of a long fish bone stitching itself into the posterior faucial pillar—as in the case of the woman reported above—than by force thrust in a straight and undeviating line. A rotating bolus, it seems to me, would much more readily free itself from any particle in it that had fixed itself at any point in the tract it is forced to travel. These foreign bodies—fish bones, pins, needles, etc. —vary in length, and lie at different and varying angles to the long or descending axis of the bolus, during both mastication and deglutition. During the rapid process of deglutition the shape of the bolus is necessarily changed by the forces acting on it. The fauces being the first station where these changes occur, the greater number of these foreign bodies are deposited here, especially in the tonsils (Brodie, Bosworth, Knight, and others). The deglutitory forces continuing to act, the bolus is continually changing its form, and the contained fish bones, etc., are necessarily shifting their places and the angles at which they lie to the long axis of the bolus; and the ceaseless transformation of the bolus and its contents being a matter of time and place, relatively considered, any point in the pharynx or œsophagus may be penetrated by the foreign body that may happen to be in the bolus. But the original position in the bolus of a pin, needle, or fish bone immediately after mastication and as deglutition begins decides the fate of these foreign bodies, and hardly so any of the natural or normal irregularities of the fauces and pharynx as seen in a state of rest with the mouth open. Foreign bodies, such as we are considering, lying parallel with the long axis of the bolus will probably reach the stomach with the bolus; and once more, in the way of corroborative evidence, I may direct attention to Ombani's experiments. But if these foreign bodies are at an angle to the long axis of the bolus, the chances are that they may be held up somewhere in the throat, unless the forces acting on the bolus shift them parallel, or nearly so, to the long axis of the line of travel. According to the experimental results of Falk, Kronecker, and Meltzer, the bolus is thrown into the cardia before the muscles of the pharynx contract, and within a tenth of a second as to time. However, immediately after the bolus has passed through the throat the middle and inferior constrictors of the pharynx contract in a quick, graded, and regular order, and sweep down into the œsophagus the particles of food which detached themselves from the bolus and remained clinging to the pharyngeal walls as the bolus was hurried or shot downward. These observations, it seems to me, can be plausibly utilized in explaining how fish bones become fixed in the throat; and, moreover, they do not stand in the way of the opinions bearing on this question as outlined, nor do they contradict them in any way. For instance, the mode of impaction of the fish bone in the Northern Dispensary case may be explained thus: Possibly the bone was shifting its position all the while the bolus was being whirled down the throat until its point struck the arytæno-epiglottic fold; the onward whirl of the bolus stitched in the bone to a certain distance, tore itself loose, and whirled onward; and immediately this was done the succeeding contraction of the pharyngeal constrictors pushed the bone still farther in. These possibilities are not excluded by hypothetical assumptions I have endeavored to explain, and the results of the Kronecker-Meltzer experiments. It must not be forgotten that these phenomena take place within the fraction of a second—primarily. Of course, subsequent pharyngeal contractions, tongue movements, the rising of the larynx, etc., would tend to drive an already fixed foreign body, like a fish bone or a pin, still deeper.

Stuart and McCormick came to the conclusion, after observing the throat through a hole in the side of the neck of a man,* that the epiglottis, at least so much of it as could be seen, does not move or bend over to cover the glottis during deglutition. When this patient was given an oyster to swallow they could see how it glided over the laryngeal surface of the epiglottis on its way downward. The oyster was received within the hollow of the tip of the epiglottis, along which they saw it glide for a certain distance. When oysters were swallowed, twice in three times they were expelled from the pharynx through the surgical hole in the side of the neck. This seems to prove that the epiglottis is not the guide of the food downward immediately after it leaves the base of the tongue; and, furthermore, that the pharynx in a normal state exerts an equalizing pressure on the descent of the bolus, if not (as Kronecker and Meltzer believe they have demonstrated) an active direct propulsive action.†

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* This man had undergone four operations for the removal of epithelioma, and the hole in the neck was left after the following parts had been cut away: The parotid gland, the ramus of the jaw, a piece of the hypoglossal nerve, the pes anserinus of the facial nerve, portions of the internal, external, and common carotids, the greater part of the great horn of the hyoid bone, the posterior belly of the digastric muscle, the faucial pillars and faucial tonsil—all on one side.

† The following observations are so interesting in themselves, and, I believe, in a measure assist in better understanding the mechanism of deglutition, that they may profitably be repeated here: Dr. Stuart had a meal with this patient, and he writes as follows (the patient had devised a pad for keeping the hole in the side of the neck closed): "The patient had no apparent difficulty with his food, whether liquid

Magendie, more than eighty years ago, demonstrated that the epiglottis is not necessary to successful swallowing. Since his time physiological experimentation and clinical observation have made this a fact and truism. Schäffer (11), (Bremen), has described a number of cases of deformed epiglottis, and among the symptoms which the deformities gave rise to were deglutitory difficulties. The epiglottides in these cases were large and irregular in shape, and probably in a measure on these accounts interfered with the deglutatory phenomena. Stuart and McCormick, in their article already quoted from, state that the epiglottis in their case stood still against the base of the tongue during deglutition. Michel (12) speaks of a primary œdematous affection of the anterior aspect of the epiglottis which occurs when the pharyngeal condition might lead one to overlook it. He calls it *angina epiglottica anterior*, and says it presents a swelling of about the size of a hazelnut and more or less reddish-gray in color. In these cases the fossæ glosso-epiglotticæ were almost unrecognizable. This condition of the epiglottis gave rise to painful deglutition, and no doubt an abnormal position of the epiglottis, making it impossible to cover the glottis during deglutition, as well as standing up against the base of the tongue, as Stuart and McCormick have seen that it does. Wagner, of this city, has removed the epiglottis *in toto* by a subhyoidean operation, and no deglutitory difficulties ensued. Pathological instances might easily be multiplied to prove, what physiologists have demonstrated over and over again, that the epiglottis is an indifferent organ in so far as deglutition is concerned. Some phonatory functions have been claimed for it. It is in the pharynx during deglutition, and so it must be accounted for; and if foreign bodies get behind it (as in Schäffer's case, a fish bone in the left interglosso-epiglottic space) or alongside of it, or transfixed through the glosso-epiglottic folds, any theory of deglutition must account for such accidents, and in doing so the deglutitory theory gives an account of itself and in so far justifies its validity. In view of the observations made by Stuart and McCormick, and the physiological and pathological demonstrations referred to and mentioned, the shutter function of the epiglottis must be abandoned.

When a foreign body has fallen in front of the epiglottis—the anatomical conditions being normal—into either of the vallecules, it possibly became detached from the bolus very early in the series of deglutitory phenomena, or slipped along too late and missed being acted on as fully as the bolus was acted on, and consequently it slipped down between the tongue and epiglottis. Or the fish bone occupies a favorable position on the outside of the bolus—it attaches itself to the pharyngeal wall and, its point swinging into the glosso-epiglottic fold, the subsequent secondary pharyngeal contraction and after-contractions stitch it in to the limits of force and space. Of course, in all possible instances, one can vary the theorization of fish-bone impaction at will—but only so within the limits of the forces named.

I have not alluded to nor taken into account all the forces at work during deglutition. That was not the object of this paper. I believe, however, that what has been said from an anatomical, physiological, pathological, and experimental point of view allows the following conclusions to be drawn:

1. The reasons for the impaction of foreign bodies, such as fish bones, needles, pins, and the like, are not to be sought for in the pharynx primarily.
2. That, under normal conditions, the tongue, fauces, and pharynx, in so far as deglutition is concerned, are perfect organs, looked at as a mechanico-physiological apparatus.
3. The primary and chief cause of fish bones, needles, etc., being caught or entangled in the throat must be looked for in the bolus itself—the position of the fish bone or needle in the bolus, whether lying deep or on the surface, the angle the fish bone or pin occupies to the long axis of the bolus, and, besides, the varying and various forces that act on the bolus as it is forced toward the stomach.
4. Possibly the bolus leaves the tongue and descends the pharynx with a twist or screw-like movement.
5. The Falk-Kronecker-Meltzer conception of deglutition, based on experimental results, may be utilized in explaining how fish bones become impacted in the throat—and these experimental results do not exclude the element of gyration as one of the forces that impel the onward-shooting bolus.
6. The epiglottis is an indifferent organ in so far as deglutition is concerned—also for foreign bodies.*

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or solid. When he had his mouthful masticated and ready for swallowing, he laid his hand upon the pad, to more securely close the opening, just as he always does when he speaks, and then he swallowed quite well. His only common inconvenience is that sometimes in swallowing liquids a little remains behind, and when this is swallowed it is apt to get into 'the wrong throat.' This is easily understood when we remember (1) the imperfectly contractile channels through which the liquids must pass; (2) one side of the lower jaw being absent, the elevators of the hyoid bone can hardly act so efficiently as normally; (3) the hypoglossal and part of the facial nerve of one side being wanting. . . . Occasionally a little piece of solid food gets against the pad; then it may annoy him in the same way as the liquids referred to, but this does not very often happen."

* While studying at some of the throat clinics in Germany during 1880 and 1881, I often heard one of the deglutitory functions of the epiglottis explained as being a sort of guard standing firmly against the current of foods and liquids as it came down from the tongue. It was supposed that the epiglottis divided this current and caused the foods and liquids to course laterally around the larynx into the œsophagus, which stood open to receive them. Heavier or large morsels, which would not divide, toppled over the epiglottis into the œsophagus. This theory of deglutition always seemed to me grotesque and inadequate. However, the most recent German book on the science and art of laryngology, very well written, as was to be expected, by Professor Dr. Moritz Schmidt, Frankfort a. M., still clings to this theory. If that were all, this note would not have been written; but Professor Schmidt also asserts in this same very good book that small, sharp-pointed foreign bodies are caught up in the epiglottis quite often, and that they occasionally penetrate it (page 471). These statements are made in a general way, and no specific instances are narrated, nor are any references given of such. Has he seen such instances in his own extensive practice? If foreign bodies do frequently fix themselves into the epiglottis and occasionally penetrate it, two good arguments are always close at hand to defend the deglutitory guard, etc., theory of the epiglottis (Schmidt, pages 44, 45). But, unfortunately, I can find neither

Bibliography.

1. Professor A. Jurasz. *Die Krankheiten der oberen Luftwegen*, etc. Heidelberg, 1891, p. 208.
2. Dr. Med. Max Schäffer (Bremen). *Chirurgische Erfahrungen in Rhinologie und Laryngologie aus den Jahren 1875 bis 1885.*
3. Walter F. Atlee, M. D. *Phil. Med. Times*, March 21, 1885, p. 474.
4. Dr. Med. O. Chiari (Vienna). *Erfahrungen auf dem Gebiete der Hals- und Nasenkrankheiten.* Vienna, 1887, p. 43.
5. George White, M. D. *Med. Record*, April 7, 1888.
6. W. F. Atlee. *Loc. cit.*, p. 474.
7. Sir M. Mackenzie, M. D., etc. *A Manual of Diseases of the Throat*, etc., London ed., 1880, p. 112.
8. Die Krankheiten des unteren Theils des Pharynx und Oesophagus. Professor Dr. König. *Deutsche Chirurgie*, Lief. 35, p. 102.
9. Falk und Kronecker. Ueber den Mechanismus der Schluckbewegung. Du Bois-Reymond's *Archiv*, 1830. H. Kronecker u. S. Meltzer. Der Schluckmechanismus, etc. Du Bois-Reymond's *Archiv*, 1883, Supplement. Also a summary: Recent Experimental Contributions to the Physiology of Deglutition, by S. J. Meltzer, in the *N. Y. Med. Jour.*, March 31, 1894.
10. The Position of the Epiglottis in Swallowing. By T. P. Anderson Stuart, M. D., Professor of Physiology, and Alexander McCormick, M. D., Lecturer on Surgery, University of Sydney. *The Journal of Anatomy and Physiology*, vol. xxvi, 1892, London.
11. Dr. Max Schäffer (Bremen). *Op. cit.*, p. 60.
12. Dr. Carl Michel (Cöln). *Zur Behandlung der Krankheiten der Mundrachenhöhle und des Kehlkopfes*, 1880, p. 4.

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instance nor any authority to corroborate the assertions made by Professor Schmidt. I have looked in vain for such instances in the indexes of the following special publications: (1) *Annales des mal. des l'oreilles et du larynx*, from 1875 to 1893; (2) *Arch. de laryngologie et de rhinologie*, 1887 to 1892; (3) *Internationales Centralblätt für Laryngologie*, etc., nine vols.; (4) *Monatsschrift für Ohrenheilkunde sowie f. Kehlkopf-Nasenrachenkrankheiten;* (5) the *Journal of Laryngology*, etc., 1887 to 1893; (6) Elsberg's *Arch. of Laryngology*, four vols. And neither do any of the following standard writers mention, even in a general way, the epiglottis as a seat for sharp-pointed foreign bodies: Massei, Knight, Bosworth, Schuh, Jurasz, Schrötter, Mackenzie, McBride, Rethi, Rosenberg, Rae, Bresgen. In view of all this evidence against the assertions of even so genial a man as Professor Schmidt is known to be, I am sure this conclusion—the epiglottis is indifferent to foreign bodies, small and sharp-pointed—may fairly be allowed to stand.

REPORT OF

FIFTY-SEVEN CASES OF INSANITY

OCCURRING IN SIX YEARS AMONG SILK-MILL EMPLOYEES IN A MANUFACTURING CITY IN NEW JERSEY.

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These cases are reported for two reasons: First, because so great a number of cases of insanity occurring in so short a period of time, among persons following the same vocation in a city having a population of less than a hundred thousand souls, is most unusual.

Second, because a majority of the cases here reported clearly demonstrate the causal relationship between prolonged and excessive overtax of mind and body and the production of insanity.

These cases were committed for treatment to the New Jersey State Hospital for the Insane at Morris Plains, within a period of six years, beginning January 1, 1887, and ending December 31, 1893. Many cases were admitted prior to January 1, 1887, but as most of them were transfers from other institutions, and chronic cases of long standing, they have not been taken into account.

In the following table, the age, sex, alleged cause of insanity, heredity, form of insanity on admission, duration of the disease, and the result are given:

TABLE I.

Case number.	Age.	Sex.	Alleged cause.	Heredity.	Form of mental disease.	Duration of treatment.	Result.
1	47	Male.	Overwork.	No.	Melancholia, acute.	6 years.	Dementia, death.
2	28	"	Epilepsy.	"	Epileptic dementia.	6 years.	Epileptic dementia.
3	26	"	Overwork.	"	Melancholia, acute.	3 months.	Recovered.
4	37	"	Ill-health and overwork.	"	Mania, acute.	7 years.	Terminal dementia.
5	20	"	Overwork.	"	Melancholia, acute.	2 years.	Unimproved.
6	40	Female.	Worry.	"	" "	4 months.	Recovered.
7	19	"	Unknown.	"	" "	3 weeks.	"
8	25	"	Overwork.	"	Mania, acute.	4 years.	Terminal dementia.
9	28	"	"	"	Melancholia, acute.	6 months.	Unimproved.
10	69	Male.	Worry.	"	Mania, acute.	5 weeks.	Recovered.
11	42	Female.	Domestic troubles.	"	Melancholia, acute.	5 months.	Improved.
12	47	Male.	Alcohol.	Unknown.	Paranoia.	23 years.	Paranoia.
13	27	"	Overwork.	Mother insane.	Mania, acute.	4 years.	Terminal dementia.
14	18	Female.	Unknown.	No.	Melancholia, acute.	13 months.	Recovered.
15	50	"	Overwork.	"	Melancholia, chronic.	2 months.	Died.
16	19	"	"	"	" "	2½ years.	Recovered.
17	24	Male.	La grippe.	"	Mania, acute.	4 months.	"
18	26	Female.	Overwork.	"	" "	11 days.	Died.
19	24	"	Heredity and overwork.	Maternal grandmother.	Melancholia, chronic.	7 months.	Unimproved.
20	54	Male.	Overwork.	No.	Melancholia, acute.	11 months.	Recovered.
21	45	"	Alcohol.	"	Mania, acute.	4 months.	Unimproved.
22	60	"	Overwork.	"	" "	7 months.	Died.
23	34	"	Unknown.	"	Melancholia, acute.	2 months.	Unimproved.
24	33	"	"	"	Primary dementia.	3 months.	Recovered.
25	47	"	Alcohol.	"	Mania, acute.	5 years.	Terminal dementia.
26	40	"	Unknown.	"	Melancholia, acute.	2 months.	Recovered.

TABLE I.—(*Concluded.*)

Case number.	Age.	Sex.	Alleged cause.	Heredity.	Form of mental disease.	Duration of treatment.	Result.
27	21	Male.	Heredity.	Mother insane.	Mania, acute.	1 year.	Recovered.
28	39	"	Unknown.	Unknown.	Epileptic dementia.	2½ years.	Epileptic dementia.
29	30	"	"	"	Primary dementia.	2 years.	Unimproved.
30	18	"	"	"	Melancholia, acute.	6 months.	Recovered.
31	33	Female.	Overwork.	No.	" "	2 years.	Unimproved.
32	26	"	"	"	" "	4 months.	"
33	35	Male.	Injury to head.	"	" "	20 months.	Terminal dementia.
34	31	"	Overwork.	Unknown.	" "	18 months.	Melancholia, chronic.
35	31	"	"	No.	Mania, acute.	18 months.	Terminal dementia.
36	38	"	"	Sister insane.	" "	1 month.	Recovered.
37	38	Female.	Epilepsy.	Unknown.	Epileptic dementia.	9 years.	Unimproved.
38	22	"	Overwork.	Mother and paternal uncle.	Melancholia, acute.	18 months.	Terminal dementia.
39	27	"	"	No.	Mania, acute.	18 months.	Mania, chronic.
40	38	"	"	"	Melancholia, acute.	9 months.	Died.
41	27	"	"	"	Mania, acute.	3 years.	Mania, chronic.
42	39	"	Epilepsy.	"	Epileptic dementia.	10 years.	Epileptic dementia.
43	25	"	Overwork.	"	Melancholia, acute.	5 months.	Recovered.
44	30	Male.	"	"	Mania, acute.	9 months.	Mania, acute.
45	23	"	"	"	" "	1 year.	Recovered.
46	31	"	Alcohol.	"	Mania, chronic.	15 years.	Mania, chronic.
47	14	"	Epilepsy.	"	Epileptic dementia.	9 years.	Epileptic dementia.
48	23	Female.	Unknown.	"	Melancholia, acute.	11 months.	Melancholia, acute.
49	43	"	Menopause.	"	" "	11 months.	" "
50	30	"	Overwork.	Unknown.	Mania, acute.	10 years.	Terminal dementia.
51	25	"	"	"	" "	9 months.	Mania, acute.
52	30	"	"	No.	Melancholia, acute.	9 months.	Recovered.
53	18	"	"	"	Mania, acute.	6 months.	Mania, acute.
54	20	"	Injury to head.	"	Mania, chronic.	12 years.	Mania, chronic.
55	23	Male.	Masturbation.	"	Primary dementia.	9 months.	Primary dementia.
56	43	"	Unknown.	Unknown.	Mania, chronic.	3½ years.	Mania, chronic.
57	20	Female.	Overwork.	No.	Acute delirious mania.	11 days.	Died.

TABLE II.—*Showing Age when admitted.*

	Male.	Female.
Up to 15 years	1	..
15 to 20 years	1	6
20 to 25 years	5	6
25 to 30 years	5	7
30 to 40 years	10	4
40 to 50 years	5	4
50 years and over	3	..

TABLE III.—*Showing alleged Cause of Mental Disease.*

Overwork	29
Overwork and heredity	4
Alcohol	4
Epilepsy	4
Menopause	1
Unknown	13

By adding the four due to overwork and heredity to those chargeable solely to overwork, we have a grand total of thirty-three, or fifty-seven per cent. of the entire number, due to this cause alone. This percentage might very properly be further increased by adding to the total a certain proportion, at least a half, of the thirteen cases whose cause is put down as being unknown. This would increase the percentage of cases due to mental and physical stress to seventy per cent.

A history of hereditary taint was ascertained in four cases only.

Case No. 13, mother insane.

Case No. 21, maternal grandmother insane.

Case No. 28, mother insane.

Case No. 39, mother and paternal uncle insane.

TABLE IV.—*Showing Form of Mental Disease at Time of Admission to Hospital.*

Mania, acute	18
Mania, acute delirious	1
Mania, chronic	4
Melancholia, acute	22
Melancholia, chronic	4
Dementia, epileptic	4
Dementia, primary	3
Paranoia	1

By adding together the acute diseases—namely, acute mania, acute delirious mania, acute melancholia, and primary dementia—we have a total of forty-five, which constitutes a fraction less than seventy-nine per cent. of the entire number.

A greater number suffered from acute melancholia than from any other single type of mental disease, thirty-eight per cent. of the entire number having this form.

Regarding the duration of the disease, twenty-eight were under treatment less than a year, ten between one and two years, and nineteen two years and over.

Of the twenty-eight who were, and up to December 31, 1893, had been under treatment less than a year, 12 were discharged as recovered, 2 were discharged as improved, 4 were discharged as unimproved, 5 died, and 5, on December 31, 1893, were still in hospital.

Of the remaining 29, under treatment a year and over, 2 were discharged as recovered, 3 were discharged as improved, 2 were discharged as unimproved, 1 died; leaving 21, on December 31, 1893, still in hospital under treatment.

A summary of the result in the entire number of 57 cases would be as follows: 14 cured, 5 improved, 6 unimproved, 6 died, 26 remaining in hospital under treatment as chronic and incurable.

We recognize in the figures the fact that the type of insanity in these cases was particularly severe. Only 19 out of the 57 got well, or showed any improvement, while 6 of the remaining 38 died, leaving 32 cases as incurable.

In looking for the causes of these cases, our task is not difficult.

Mercier, writing upon the causes of insanity, says: "Insanity is, in mathematical terms, a function of two variables. That is to say, there are two factors, and only two, in its causation, and these factors are complementary. Both enter into every case of insanity, and the stronger the influence of one factor, the less of the other factor is needed to produce the result. These factors are, in brief, 'heredity and stress.' The word 'stress' is used in this connection in its broadest sense. It includes violence to body as well as to mind. Stress means more than strain, which is commonly employed to designate mental tension."

Stress, direct, continuous, and powerful, was the sole cause in a majority of these cases. It was applied in different ways: Long hours daily spent in managing complex and delicate machinery; one person sometimes doing the work of two or more in order to increase his earnings; insufficient mental relaxation and rest; insufficient outdoor exercise; the accuracy and complexity of manual motion, and mental application constantly required; the vitiated atmosphere and poor food are the prime factors in the production of so many cases of insanity among this class of people.

I recall the case of one young woman twenty-four years of age, bright, vigorous, and industrious, who, after doing the work of three persons in one of these mills for some months, in order to support a widowed mother and several brothers and sisters, broke down with paresis, and was placed in an asylum, where she died in less than a year after.

The number of cases of insanity that come from these mills is increasing annually.

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THE PRACTICAL WORKINGS OF THE NEW LAWS FOR THE STATE CARE OF THE INSANE.

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(*Continued from page 557.*)

Among the more important improvements and reforms which have been established and carried into successful practice under the new laws may be mentioned the following:

1. The adoption, July 1, 1890, of a new and improved form of medical certificate in lunacy, designed, on the one hand, to facilitate the commitment of insane persons to institutions, and, on the other, to surround the liberty of the individual with better safeguards against carelessness and wrongful intent than had theretofore existed, while at the same time permitting of efficiency and celerity of operation, and also insuring a much greater amount of information for the medical officers of the hospitals than was possible under the method which it supplanted. In order to secure uniformity, all blank commitments are now furnished by the commission, the blanks being printed on stereotyped plates, which are the property of the State. These printed blanks are used for copies as well as originals, and may be obtained free of cost on application to county clerks, superintendents of hospitals, asylums, homes, or retreats, and superintendents of the poor. Certified copies of all commitments are required to be filed in the office of the commission within ten days after the patient's admission to the hospital, where they are carefully scrutinized with reference to correctness of form, sufficiency as to facts indicating insanity, and also as to the qualifications of the certifying physicians. This enables the commission to detect and promptly correct any irregularity, whether intentional or otherwise, in the commitment of the insane. As showing the extent to which error has been eliminated by the adoption of this form, it may be stated that the commission has now to reject by reason of defect as to form, insufficiency of facts, or lack of legal qualifications of examining physicians, less than a half of one per cent. of all the medical certificates received.

2. A registration in the office of the commission of all qualified medical examiners in lunacy in the State, whereby the commission is enabled to at once determine on receipt of a lunacy certificate if the examiners signing the same are legally qualified to perform these services.

3. A complete registration in the office of the commission of all persons held in custody as insane, whether in public or private institutions, with minute data as to the name, age, sex, nativity, occupation, civil condition, date of commitment, names of the signers of the medical certificate and of the judge approving the certificate, date of admission, whether brought from home or an institution, by whom brought, and the insane person's physical condition. The records also show the date of discharge of each patient, and whether recovered, improved, or unimproved, and to whose care discharged; if transferred, for what cause and to what institution, and, if dead, the date and cause of death—thus enabling the commission to determine accurately at all times the number, condition, and increase of the insane in the State and to furnish for proper use this and other valuable information which it was impossible to obtain before the establishment of this bureau of registration.

4. The adoption for all the hospitals and asylums, public and private, of a uniform system of statistical returns, thus enabling any one who may desire to do so to make intelligent comparisons as to the results in the various institutions in the State.

5. The establishment of a uniform system of medical records, including case books, prescription records, records of admissions and discharges, daily reports, etc., and the requirement that entries showing the condition and progress of each case shall be made in the case-book records at

least once in each month during the first year and at least once in every three months thereafter.

6. The establishment of a uniform system of receipts and expenditures in all the State hospitals, thus providing for intelligent comparison as to the expenses of these institutions. Formerly each hospital had its own system of records and accounts, each being different from that of any other hospital.

7. A provision for the transfer of patients from one institution to another, on the order of the commission, whenever, for any sufficient reason, it may be deemed desirable to do so.

8. A regulation providing for the admission of private patients to State hospitals from any part of the State without restriction as to district, at a maximum rate not to exceed ten dollars per week, at the same time protecting the rights of public patients and of such as can pay only small sums per week, by requiring that no private patient in any State hospital shall be permitted to occupy more than one room for his or her personal use, or to command, except for medical reasons, the exclusive services of an attendant, and that there shall be no distinction between public and private patients as regards the scale of care and accommodations furnished them.

9. An effort, which has been fairly successful, to induce or compel the friends or relatives of patients who are able and legally liable therefor to reimburse the State for the support of such patients. It was found that a large number of persons who were able and liable had heretofore evaded this obligation.

10. The adoption of regulations governing the transfer of patients from their homes or from poorhouses to State hospitals, requiring that such patients before being sent to the asylum shall be in a state of bodily cleanliness and suitably and comfortably clad.

11. Providing that the hospitals shall send a trained attendant to bring patients thereto, and that in all cases of female patients there shall be provided a female attendant. This system insures a greater degree of comfort and decency in the removal of patients to the hospitals, and it has thus far shown a very marked reduction in the cost of such transfer as compared with the old system of transfer by county superintendents of the poor.

12. Provision for the paroling of patients who are not regarded as homicidal, suicidal, or otherwise dangerous for a period of not more than thirty days, during any portion of which they may be returned to the hospital without new process of commitment, or they may be permanently discharged, thus affording patients whose condition is such as to warrant it an opportunity to visit their homes or to go out on trial before final discharge.

13. A regulation requiring that all patients on admission to a hospital or asylum for the insane, whether public or private, shall be immediately informed of the nature of the institution and the fact that they are detained there under legal commitment. The adoption of this regulation was suggested by the fact that patients frequently complained to the commissioners that they had been decoyed into the institution and only accidentally discovered that they were detained in a lunatic asylum. Several instances were found where the fact of commitment and detention had apparently been deliberately concealed from the patient until it was made known to him by the visiting commissioners. The deception of insane persons in this manner is deprecated by all who have had experience in dealing with this class, it being recognized as an important element in the treatment of the insane that no deception should be practiced.

14. A division of the State into hospital districts with reference to the number of insane in each district and the extent of accommodations in the hospital located therein. This provision of the State Care Act is sufficiently elastic to admit of a change in the limits of any district whenever it shall be deemed necessary to more conveniently care for the insane in the various hospitals, or to better accommodate the convenience of any particular locality.

15. A change in the legal title of the State institutions from "asylums" to "hospitals," and a reorganization of those State institutions * which were formerly asylums for the chronic pauper insane upon a hospital basis, thus establishing the hospital idea for all.

16. A provision for the admission of public patients to a State hospital beyond the limits of the district in which they reside whenever, for any sufficient reason, they or their friends may so desire. This is especially designed to provide for such patients as may desire treatment in a homœopathic hospital, or in case of patients residing in the homœopathic hospital district who may desire other than homœopathic treatment.

17. An order for the regulation of the correspondence of the insane, providing that each patient be permitted to write to some relative or friend once in two weeks and oftener if necessary, in the discretion of the medical superintendent, and, if patients themselves are unable for any cause to write, the medical superintendent must delegate some proper person to write for them at suitable intervals if they so desire; all letters to be forwarded at once to destination unless they are profane, obscene, or too illegible or incoherent to be understood, and the postage must be furnished by the institution if the relatives or friends are unable to provide the same. All letters detained because of obscenity, profanity, or for any other reason must be forwarded at once to the office of the commission with the reasons for detention indorsed thereon. All letters addressed to the Governor, attorney general, judges of courts of record, district attorneys, or to the State Commissioners in Lunacy must be forwarded at once without examination. This order is designed to afford patients who regard themselves as illegally detained or improperly treated an opportunity to communicate with their friends or with any official in the State who would have jurisdiction in a lunacy case.

18. The investigation by the commission of hundreds of complaints of illegal detention or abuse on the part of patients, every patient who requests it, or whose friends may request it, being granted a hearing apart from any officer of the hospital, if the patient so desires.

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* Willard and Binghamton.

19. The adoption of an order requiring the superintendent or physician in charge of each institution for the care and treatment of the insane not to permit the service of any legal process whatever upon an insane patient, except upon the order of a judge of a court of record, which order shall show that the judge had knowledge of the fact that the person upon whom the process is sought to be served was at the date of the order an inmate of such institution; that no insane person be permitted to sign any bill, check, draft, or other evidence of indebtedness, or to execute any deed or mortgage, or other legal conveyance, except upon the order of a judge of a court of record which shows that the judge had notice of the fact that the person whose signature is sought to be obtained was at the date of the order an inmate of an institution for the insane; also that the substance of the order and the proceedings had thereunder must be entered in the history of the patient in the asylum case book, and a copy of the same forwarded to the committee of the person and property of the patient, if there be one, or, if there be no committee, then to the nearest known relative or next friend of the patient. This order is designed to protect the interests of the insane against designing persons, and especially to prohibit the wrongful service of papers on lunatics in divorce proceedings.

20. A regulation for the admission of voluntary patients to such of the private institutions for the insane as are conducted on the so-called "family plan." For legal reasons, which are regarded as sufficient, the admission of voluntary patients to public hospitals or to incorporated private hospitals is not permissible.

21. The adoption of an order revoking the licenses of all private asylums conducted by laymen, and restricting the licensing of private asylums, homes, and retreats to reputable physicians of experience in the care and treatment of the insane.

22. The adoption of a regulation requiring all hospitals and asylums for the insane, both public and private, to provide a liberal amount of fire protection, the extent and variety of such means of fire protection being determined by the commission according to the location, extent, and arrangement of the institution.

23. The substitution, in all cases, of wire beds, hair mattresses, and woolen blankets for straw beds and cotton quilts, which were formerly more or less in use in many of the institutions.

24. An order prohibiting the purchase of adulterated food supplies of any kind for use in State hospitals; also for the purchase, wherever necessary, of a generally better quality of staple articles of food supply; also a better grade of clothing, and better quality and increased amount of furniture, in the way of carpets, rugs, easy-chairs, pictures, etc.; a large increase in the amount of reading matter supplied to patients, and a marked extension of the facilities for amusements and diversion and for the industrial occupation of patients; also for an increased ratio of attendants to patients, the establishment of attendants' homes at several of the hospitals, and a better rate of compensation to attendants; also the introduction of women attendants in the men's convalescent wards and in the ward dining-rooms for men; the introduction of spray baths, especially for the bathing of filthy patients; the abolition of airing courts or inclosed exercise yards, thus affording patients a larger degree of freedom than heretofore; the complete abolition of all mechanical restraint in the management of the insane, except in one or two hospitals where there is still a tendency to cling to old methods which are now nearly everywhere regarded as obsolete; the establishment of an efficient system of night service of attendants in all the public hospitals for the insane; the general adoption in the hospitals, both public and private, of a uniform dress for attendants' wear; the establishment of infirmary or hospital wards, under the charge of a hospital attendant skilled in nursing the sick, for patients who are sufficiently ill to require treatment in bed.

25. The removal of patients to other States and countries, in cases where it can be determined that the patient is a non-resident of the State. By this means the number of public patients supported by the State has been materially lessened.

26. A successful effort to induce the authorities of New York city to set apart specific appropriations for the benefit of the insane in the institutions under the Department of Charities and Corrections, and to prohibit the use of these moneys for any other purpose. This has resulted in a general improvement of the standard of care of the insane in the city institutions, and especially in the matter of bedding and in the quality of the food supplies, beef being now supplied in carcass in place of "chucks and necks" as formerly. A better quality of flour has also been secured to the inmates of these institutions.

27. The adoption of an order by the commission providing for the appointment of a general medical superintendent for the Kings County lunatic asylums, who shall have power to make rules and regulations for the government of the asylums, appoint and discharge all employees, regulate the dietary, make ordinary repairs, etc. This order was appealed from by the local board, but the higher courts sustained it, and its effect has been to remove the immediate management of the Kings County asylums from partisan influences which have hitherto been so detrimental to these institutions, and to generally improve the standard of care afforded to their inmates.

28. The publication of an official directory of all the hospitals and asylums, licensed private asylums, homes, and retreats for the insane in the State, showing the location and capacity of each institution, how reached, and the name of the superintendent or physician in charge; also, in the case of private institutions, the minimum rate per week charged for maintenance.

29. Provision for the clinical teaching of insanity in hospitals for the insane by the admission to the wards thereof of students of medical colleges situated in their vicinity, as well as of practicing physicians, who may desire the opportunity of clinically studying mental diseases, under such restrictions as the medical superintendent may deem wise and proper, thus enabling, as far as practicable, physicians engaged in general practice, and upon whom the first

care of nearly all cases of insanity necessarily devolves, an opportunity to acquire a practical knowledge of this disease, if they so desire.

30. Provision for the appointment from among recent graduates in medicine of two medical internes in each State hospital, in addition to the regular medical staff, thus providing for a training school for medical officers in these institutions, from which the regular medical staff may be recruited.

31. The abolition of the spoils system in the selection of medical officers of State hospitals through the adoption by the State Civil Service Commission, upon the recommendation of the Commission in Lunacy, of a regulation requiring appointments of all medical officers in State hospitals to be made only after competitive civil-service examination, and raising the standard of requirements for eligibility to such examinations. This has already resulted in the merited promotion of a number of experienced assistant physicians who otherwise would not have obtained promotion save through favoritism.

32. A material increase in the proportion of medical officers to patients in both public and private institutions.

33. The enactment and fulfillment of a law requiring the appointment of a woman physician on the staff of each State hospital, at a fixed salary of twelve hundred dollars per annum.

In connection with this subject it may be stated that the commission has in contemplation the appointment at an early day of a special pathologist, with a completely equipped laboratory, for the prosecution of investigations in neuro-anatomy and neuro physiology and in the study of brain pathology. It is designed to make this department practically a school for the teaching of brain pathology to physicians who may desire to avail themselves of it, and especially to such of the physicians on the staffs of the respective State hospitals as possess an aptitude and desire for such work.

Respecting what has been done in the direction of improvement of the hospitals themselves and for the promotion of the welfare and comfort of their inmates, as a result of the adoption of the policy of State care, a perusal of the annual reports of the State hospitals will show that the condition of these institutions as regards organization, equipment, sanitary condition, fire protection, clothing and furniture, food supplies, discipline, nursing, means of diversion and occupation, and medical service has been steadily progressive, and that the standard of care generally is very much higher than it was five years ago, when the State Commission in Lunacy was created.

These reports not only reflect the improvements which have been wrought at the Binghamton and Willard Hospitals, which formerly cared only for the so-called "chronic pauper insane," and maintained a correspondingly low standard of care, and the progress of the Rochester State Hospital, which, prior to 1891, was a county asylum with meager facilities for the care and treatment of its inmates, but they substantially outline the present status and condition of all the eight State hospitals.

The superintendent of the Binghamton State Hospital, in his report for 1893, states as follows:

"Analysis of the table showing the causes of death, and comparison with similar tables for preceding years, afford extremely gratifying results. The reduction in the death rate is not only gratifying when computed on the number admitted, but is also highly satisfactory when based on the average daily population, for on this basis, during the past ten years, it has fallen from 11·73 per cent. in 1883 to 6·35 per cent. in 1893. The question naturally arises, To what is this remarkable improvement due? To you who have seen the institution grow from a poorly equipped, crudely furnished, poverty-stricken asylum for the chronic insane into the splendid hospital of to-day, supplied with modern sanitary appliances, provided with good food and raiment for its patients, diversified occupation and amusements to engage their hands and minds, and kind nurses to watch over them, the question needs no answer. Improved surroundings, humane care and treatment, freedom from mechanical restraint, and the largest personal liberty consistent with safety, are the agencies through which the change has been accomplished. *Up to the year 1890 it was with exceeding difficulty that the bare necessaries of life could be procured for our patients, but when in that year the State Care Bill became a law this hospital, scarcely recognized by its sister institutions, was suddenly galvanized into life, and under the beneficent provisions of that act it received a new impetus which enabled it to rise rapidly to high rank in the State. Under the old law anything was good enough for the broken down, chronic cases it sheltered; under the new law the arbitrary distinction between acute and chronic insanity was legally annihilated, and the doors of the hospital were opened to all for whom admission was sought from the eight counties constituting the district assigned as its bailiwick.** Of this law the *American Journal of Insanity* for April, 1890, speaks in the following language: 'The State Care Bill, providing State care for all the dependent insane in the State of New York, became a law April 15, 1890. By signing this bill Governor Hill consummated one of the most signal triumphs ever achieved by humanity in the State of New York. All honor to those good men and women who have labored zealously day in and day out for the past three years to bring about this happy result. In the general rejoicing there will be no caviling as to who is entitled to the lion's share of the credit, though all must recognize the important part played in this great reform by the State Commission in Lunacy.' As was forecast by the *Journal's* prophetic utterance three years ago, hundreds of patients in this hospital are to-day living testimonials of the humanitarianism of this law."

The report of the trustees of this hospital for 1892 contains the following:

"Since the enactment of Chapter 126 of the Laws of 1890, popularly known as the State Care Act, the character of this institution has gradually undergone a change. The chronic asylum element has been steadily eliminated as the 'hospital idea' has gained stronger foothold. The wards have taken on a more cheerful aspect, and the patients have become more tractable under the humanizing influence of artistic furniture, pictures, rugs, carpets, curtains, and other draperies, all of which please the eye, cheer the mind, and tend to promote the recovery of the patient. Tablecloths have been introduced in all the dining rooms, and better tableware is generally in use. The steel ceilings provided for by the last Legislature have been erected to the extent of thirty-two thousand feet, and they not only beautify the wards but give assurance of safety against falling masses of plaster, and guarantee material protection against fire. . . . Large numbers of patients have found useful and beneficial occupation on the farm, and have exercised better self-control and enjoyed better health when thus employed than when idle." And again: "The State Commissioners in Lunacy have made frequent visits at the hospital during the year, and have made valuable suggestions regarding its management. It affords us pleasure to state that they have co-operated with the trustees and resident officers to the end that the institution might attain the highest degree of efficiency and that the patients should derive the greatest possible benefit."

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* In these quotations from the hospital reports the Italics are the writer's.

In this same report the superintendent says: "Material progress has been made along the lines of hospital administration that now attract the greatest attention—viz., greater personal attention to the insane, more diversified occupation, and greater individual liberty." And again, in referring to the work of the State Commission in Lunacy, Superintendent Wagner says: "I should be derelict in my duty if I failed to make acknowledgment to the State Commission in Lunacy for advice and encouragement in carrying out the details of hospital organization and management. The recommendations of the commission during the past twelve months have been uniformly in the direction of a higher and better service in the hospitals of the State, and their interest has been keenly alive to all questions affecting the welfare of the patients, as has been evidenced by their frequent visits and inspections."

The superintendent of the St. Lawrence State Hospital, in his report for 1892, states as follows: "The service of the hospital is progressively improving, and particularly with respect to the immediate care of patients. Aside from the improvement resulting from experience in the care of the insane, the training of a fair proportion of our nurses and attendants systematically has had a marked influence upon the whole number by the example of their skilled service."

The report of the superintendent* of the Willard State Hospital for the year 1892 states as follows: "A great deal of new furniture has been purchased and placed upon the wards, and a number of painters, carpenters, and plasterers have been kept busy repairing and beautifying various parts of the institution. The branch, or infirmary for women, has been renovated and decorated throughout, and it now presents a remarkably cheerful appearance. The lower floor of the main building, consisting of three wards each for men and women, is also in excellent condition. Among the articles of furniture purchased were five pianos, a music box, and a billiard table. Every building in which there are women has now a piano, while the woman's department in the main building has two." And again: "Up to a year ago the normal capacity of the institution was considered to be nineteen hundred and thirty-eight, and, as we then had an average of two thousand and fifty patients, more than a hundred were compelled to sleep upon the floor, or in cots placed nightly in the corridors and removed during the day. But, by building the additions for the new dining rooms and turning the abandoned ones into dormitories, by adding a bed here and there where space would permit, and by finding sleeping apartments off of the wards for several employees who had no ward duties to perform, the capacity has been gradually increased until now twenty-one hundred patients—a thousand men and eleven hundred women—can be comfortably cared for. And, paradoxical as it may seem, the capacity of the institution has been increased by one hundred and sixty-two beds, although not a single ward has been added to the hospital. This entire increase, which would have cost the State $89,100 had a building been erected under the State Care Act at a per capita cost of $550, has been brought about by an expenditure of about $11,000 for new dining rooms, and about half of that sum for interior alterations." This report further states that: "The night service in the main building has been considerably increased during the past year. *Where there was formerly but one night attendant on each side of the house there are now six.* This change was found necessary on account of the increase in the number of suicidal and feeble and filthy cases, and also by the desire to put all epileptics under night care. In consequence of this improvement in the night service, chambers have been done away with to a very great extent. On the convalescent wards and on the wards where there is night service the room doors are left unlocked, thus giving the patients free access to the closets during the night. The advantage of discarding the objectionable and dangerous vessel is one which only a hospital physician can appreciate. . . . The proportion of night attendants to the average population is now one to sixty-six, whereas a year ago it was one to eighty-two. Fortunately, the time has passed when it was only thought necessary to keep the insane confined on the wards during the day and locked securely in their rooms at night. Among the many advances in asylum management during the past few years not the least has been the effort to make night care compare favorably with that of the day. . . . Upon the suggestion of Commissioner Brown, spray baths have been introduced in the infirmaries for both men and women. They have been found very satisfactory in every way, and far superior to the ordinary tub. By their use a great saving of water is effected, the bathing can be done in much less time, absolutely clean water for each patient is guaranteed, and, above all, the possibility of accident is entirely overcome. Many other improvements have taken place in regard to bathing, the most important being regular and systematic medical supervision. . . . The wards on the first floor on each side of the main building have been entirely renovated and refurnished, and they now compare favorably, in appearance and comfort, with the wards of any hospital in the State."

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* Dr. Charles W. Pilgrim, now superintendent of the Hudson River State Hospital.

In the report of the Buffalo State Hospital for 1892 the managers state as follows: "The managers note with pleasure the efforts put forth to occupy and interest the patients. In every department employment is found for them—in the carpenter and paint shops, in the engine-house, in the bakery, in the kitchen, on the farm, at the barns, on the grounds, in the greenhouse, in the laundry, in the sewing room, and in the schoolroom. To this constant effort to find occupation for all who are able to do something we can but attribute much of the improvement and contentment of the inmates.

"It breaks up the monotony of institutional life, improves the health, occupies the mind to the exclusion of dwelling upon delusions, and distracts the attention of patients from their unhappy state. It also furnishes a vent for restlessness and much of the mischief idle hands find to do, not only among the inmates of asylums but in the outside world. *One is impressed by this in contrasting the wards of a hospital to-day with those of a few years since, when listlessness and idleness were the prevalent conditions of life in an asylum. The two important factors to which must be attributed in a large degree the improvement of our hospitals are occupation and night attendance. They have changed these institutions from the former bedlams to the modern hospitals for the insane.*"

And again: "The hospital buildings proper have not been neglected, but have received a due share of attention. The wards of the A buildings have been tastefully painted and decorated and are now more cheerful and homelike. New furniture has been supplied where needed, additional pictures placed on the walls, and carpets and rugs of our own manufacture on the floors. Attention has been given to the plumbing; vent pipes and traps have been put upon the fixtures, and in all of the A wards two new enameled tubs have been put in the bathrooms.

"One of the corridors connecting the new ward building with the center has been furnished with desks, and is utilized for the patient's school during the morning hours and in the afternoon for the attendants' training school.

"This is now a marked feature of the administration of the hospital, and from its early inception has received the support of the board of managers. They are convinced, by the more intelligent care given to patients and by the success which has attended the nurses who have gone out from the school and entered upon private work, of the great value of this school to the hospital and community.

"We have thus hastily passed in review some of the more important changes and improvements which have been made in the hospital, on the grounds, and in the conduct of affairs during the year. We feel assured also that the moral and medical treatment of patients have received their full share of attention from the medical staff. They have been devoted to the duties respectively assigned to them and have labored successfully to elevate the general standard of care."

The medical superintendent of this hospital, in his report for the same year, states: "Under the new regulations regarding the commitment of the insane the number brought in restraint was still further diminished from preceding years. No restraint was used in the case of women patients, and only three men were brought in handcuffs and four in wristlets."

(*To be concluded.*)

CERTAIN ERRONEOUS PRINCIPLES AND METHODS IN GYNÆCOLOGY.*

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It is by no means my intention to canvass the whole field of gynæcology in this paper, pointing out all the views and practices that I regard as erroneous. Such a course would be at least open to the objection of wearying the listener, for the moot points in gynæcology as now practiced are many, and the day has long passed when questions of this character can be regarded as settled beyond dispute by the *ipse dixit* of an alleged authority, or even by the consensus of opinion and practice of many physicians. The history of medicine teaches many things, but nothing more clearly than that large bodies of the profession may grievously err in their views and practices.

My own views of present errors are merely given for what they are worth, as they are tested in the crucibles of practice and common sense.

Is gynæcological surgery synonymous with gynæcology? Probably the most fundamental error of the day in this matter is the tacit assumption of many that gynæcology is synonymous with gynæcological surgery. I have possibly dwelt upon this before, but it is none the less true, and I am impelled to repeat it, and drive it home into our inner consciousness by reason of that scientific quality of mind as well as matter—inertia, which permits us to change habits of thought but slowly when a certain impetus has been gained in the wrong direction. This assumption that the diseases of women are the exclusive domain of the surgeon had its bad results at its inception, but was at that time by no means so freighted with dangerous possibilities as at the present, when, under the stimulus of a reduced mortality due to the slowly perceived duties of surgical cleanliness, the most heroic operations are daily practiced by these alleged masters of the whole art of curing womanly ills. Gynæcology should be understood as embracing the whole field of the affections commonly found in women, particularly those likely to be confounded with purely local faults—such as disorders of the nervous, digestive, and eliminative systems.

I do not for a moment wish to decry the value and signal services of surgery in these affections; it is only the assumption that this department of gynæcology is the whole of it that I desire to point out as an important error and one that is responsible for many radical mistakes in treatment.

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* Read before the Philadelphia Obstetrical Society, March 1, 1894.

Is removal the only proper course to pursue with diseased organs? A sufficient text upon which to arraign some of these erroneous views thus conceived and born may be found in a few words spoken by a visiting surgeon in a discussion in this society during the present winter. At the close of his remarks on a paper read by Dr. Goodell this speaker asserted his conviction that where seriously diseased structures were found in the pelvis he still regarded their removal as the only proper course. Without invidious distinction, this sentiment may be taken as the working creed of the whole body of surgical gynæcologists, who regard certain ultra-mechanical methods with which they are familiar as applicable to all diseases of women. But if the only proper course to pursue in pelvic diseases is to remove diseased organs, how happens it that this principle has not been applied to other portions of the body? Typhoid fever, gastritis, cystitis, hepatitis and the whole list of organic inflammations are clearly due to local diseased organs, yet we do not hear of the removal of these structures being either proposed or practiced. It may be said, of course, that the preservation of life would be impossible should the organs be removed in these cases; but such questions of expediency do not have place when the parts affected are not more essential to life than the pelvic organs, yet we still fail to hear of any penes being removed for gleet or stricture, testes for mere orchitis, limbs for an arthritis, or eyes for a keratitis. It is even considered justifiable to remove the ovaries for an ecchymotic extravasation of blood into the broad ligament or surrounding cavities or tissues, when it is well known that a much larger hæmatoma of the orbit, a black eye, will get well in a few days.

But even if it were the practice to remove organs not hopelessly diseased in other departments of surgery, it would still be proper to protest against such a low estimate of medical responsibilities in this or any department, and to point out that even a cure of an affection gained by the loss of a portion of the human body is a confession of scientific incompleteness with which we should not be satisfied.

Prevailing Mechanical Methods Inconsistent with Recent Bacterial Discoveries.—A great majority of these hasty and useless amputations of pelvic organs that are still amenable to cure, as well as many ultra mechanical methods in minor gynæcology, arise in a misconception of the nature and course of certain affections essentially catarrhal in character. The advent of exact knowledge of the microbic nature of these affections, proving them to be primarily traceable to diseased mucous membranes, has laid to rest many theories of pelvic disease, notably those relating to displacements and obstruction, yet, sad to say, these same affections are still treated in accordance with the dead theories, and a large portion of the income of instrument-makers flows from their sale of pessaries and dilators.

Intrenched behind an old belief that the uterine congestion and engorgement that accompanies backward and downward displacements of the uterus were secondary to the displacement, the method of treatment is the correction of the displacements, first, by mechanical means, in the hope that a proper position and easier circulation will cure the case. That relief will at times follow this procedure is unquestioned; but the far greater number in which it fails to either reduce the hyperplasia or the subjective symptoms proves that the reasoning is at fault. This mechanical theory of the causation of hyperplasia is in fact a unique survival amid the present facts of the true nature of endometritis and its sequelæ—the various atrophies and connective-tissue replacements of the uterine muscle. Modern pathology points clearly to microbic agencies as the initial cause of the more common alterations in the health of the endometrium and consecutive changes within the parenchyma, even if a trauma, such as a laceration, be the means of admitting the germs to a foothold within the tissues. Flexions are doubtless due to local, one-sided atrophies of the uterine muscular tissue, while downward and backward displacements are the conjoint effect of hyperplasia, tight lacing, and relaxation or injuries to the pelvic floor.

The most important conditions present therefore in endometritis, flexions, and displacements are histological alterations within the tissues of the uterus. Great relaxation of ligaments, and even considerable impairment of the pelvic floor, may exist without material alteration of the situation of the uterus, and without subjective symptoms of any kind, as can be readily proved by any one who examines any number of multiparous women who do not consider themselves ill. The majority of women, in fact, who have had three or more children present these symptoms of relaxation without descensus, and unless there is a descensus due to a still existent hyperplastic inflammation, or a proctocele or cystocele, they have no complaints to make.

In view, therefore, of the easily demonstrable histological changes always present in flexions and displacements that cause suffering to the patient, it is manifestly proper to combat the morbid processes within the uterus by curative agencies adapted to the conditions, rather than by distending and paralyzing the vagina in an effort to remove a remote consequence of the disease, or by excising a mere portion of the diseased organ. A restoration of tone and function to the parts should be the result of well-directed efforts.

The Cervical Laceration Myth.—The same objections lie against the idea that a healed tear of the cervix has any true pathological importance, unless the laceration, by virtue of its extent, interferes with pregnancy. The symptoms attributed to the tear are due to the consequences of microbic invasion of the uterus, and though the rest and hygienic accompaniments of the operation for repair at times favorably affect the patient for a while, there is rarely any improvement noted in cases suffering from symptoms traceable to the uterus. The cause of the suffering is not the hiatus in the lips of the uterus nor the much-maligned scar tissue at the apex, but lies in the chronically inflamed uterus.

To cure the patient we must cure the endometritis, metritis, or hyperplasia as well as any enfeeblement of the nervous system consequent upon them. After that is done it is time to consider the wisdom of repairing the tear, if it is a bad one. If hot water, glycerin tampons, and iodine to the vault have failed, the patient should be placed on mixed galvanic and faradaic treatment, applied within the cavity of the uterus by means of a pliant electrode covered with moist absorbent cotton. It is extremely rare that improvement does not show itself immediately, as the contractile effects of the two currents are efficiently assisted by the microbicidal and decongestive action of the positive pole of the galvanic current.

Oophorectomy as a Disease.—As to the buckets filled with ovaries and tubes that are nightly paraded in our societies, words fail me. The disease for which these organs are removed exists in the minds of the operators rather than in the bodies of the patients, and has stained the last quarter of the nineteenth century with an indelible blot on the fame of medical practice. I leave the discussion of this woful epidemic to posterity, and will merely remark that the catarrhal and inflammatory affections of the tubes and ovaries for which these organs are thus amputated are generally amenable to curative influences patiently prosecuted, chief of which is the direct application of the galvanic current to the uterus, or the indirect application of the same and the faradaic current to the ovary itself. Probably the most powerful means is the uterine method when it can be safely employed, for we can thus initiate a curative process at the point in the mucous tract where the initial inflammatory condition had its start, and where it still remains in most cases.

The Prevention of Ovarian Disease.—But a more easily applied remedy lies in the prevention of tubal and ovarian disease by a recognition that they are simply extensions upward of microbic infections of the uterus. In the early cure of virginal endometritis, subinvolution, and gonorrhœal invasions by intra-uterine galvanic applications, associated with proper hygienic measures, we may stamp out the disease as a conspicuous factor in modern life, even though hampered as we are with the catarrh-breeding environment of American climate and habits. It is while this affection is still in the uterine stage of its existence that these young women may be saved from the future invalidism of ovarian disease, with its unwelcome vista of a suggested sexless future; and I have had the pleasure of seeing a number of patients thus rescued, both from unsound health and from the irrevocable consequences of an unwisely suggested castration.

Endometritis the Initial Lesion in many Pelvic Diseases.—In spite of the practical neglect of endometritis by most of our active gynæcologists, who are merely content to remove rather than cure its consequences, there can be no question of its great practical importance in the ætiology of pelvic inflammatory disease, and he who cures a chronic case accomplishes results of far-reaching consequence to his patient. I have already indicated my own methods in dealing with this affection in the paragraph on laceration.

Menorrhalgia and the Operative Production of Laceration.—Closely allied to this question is that of painful menstruation, for which I have suggested the term menorrhalgia as preferable to dysmenorrhœa. To the minds of careful investigators the old theory that this symptom was due to a mimic labor with an obstructed outlet has been completely disproved. No accumulations have ever been shown to occur in these cases, and the fact that a large dilator can be inserted within the cavity of the uterus disproves the existence of any obstruction to the flow of the menstrual fluid. Spasmodic contractions of the circular muscular fibers of the internal os may be produced by the irritation of a sound, but it is by no means proved that these fibers are contracted at the time of flow. A case of my own, in which I inserted the sound during an attack of pain, tends to prove the contrary, for an internal os that admitted the sound with difficulty at other times was quite patulous during the pain. A rational review of this question is convincing that menstrual pain is due to either ovarian or nervous erethism, the actual attack being a neuro-muscular storm in a series of organs imperfectly prepared to functionate, the exciting cause being often a catarrhal endometritis, though by no means always. For a disease of such varied relationships and bearings it is manifestly improper to practice the routine method of dilatation, which is irrational, rarely of permanent benefit, harsh, and often productive of dangerous results. The causation and pathology teach the need of therapeutic measures to improve the general health and nerve tone, and to combat the local congestions and catarrhs if such exist; and the readiness with which these cases respond to such combined measures offers no excuse for resort to operations whose only *rationale* is a disproved theory. It surely does not need the many uncured cases that come under our observation to prove the impropriety of this operation, which produces the very lacerations so laboriously and expensively sewed up after childbirth.

Dangerous Operations for Benign Tumors.—A different reason applies to any opposition I may express to operations for the removal of fibroid tumors of the uterus. These growths are distinct deformities of the uterus, and, when large, are deformities of the person. Surgical operations for their removal are therefore proper enough, and the question becomes one of expediency only.

It has been amply demonstrated that all small fibroids, and solid and interstitial varieties of large ones, are amenable to arrest and retrogression by the use of the Apostoli method of electrical treatment. In my own experience this has occurred in seventy-six out of eighty cases, in seven of which the tumor disappeared entirely. The claims of this method in preference to the knife are therefore of very great importance, particularly when the large mortality of the operation is contrasted with the slight mortality of the tumors left to themselves, and when it is also remembered that a successful hysterectomy renders the patient sexless, and leads so often to a troublesome hernia at the site of the abdominal incision. Degenerating or suppurating tumors do not permit us to select any other alternative than the knife.

Restoration of Function.—The highest aim of the gynæcologist should be the restoration of function, yet how seldom do we hear of this, in its broadest sense, being an ever-present consideration with the operator in gynæcology as it is practiced! The cure of sterility, it is true, is frequently aimed at, but a reader of our most recent works on the diseases of women will make wondrous excursions into the realms of antiseptic surgery and abdominal section, will read of gross diseases and endless amputations as remedies, but will probably see no mention whatever of the analogous conditions and weaknesses peculiar to their sex which surely women suffer from as well as men. The gynæcologist knows much of intestinal anastomosis and cholecystectomy, but nothing of matronal impotence. It is like the play of *Hamlet* without Hamlet. In these neglected fields lie some of the remote causes of pelvic disease and many of the more trifling complaints which mar the conjugal and social life of woman.

212 South Fifteenth Street.

INGROWING TOE NAIL:

COTTING'S OPERATION, WITH THIERSCH'S SKIN-GRAFTING ON THE SECOND DAY. COMPLETE HEALING IN A WEEK.

REPORT OF FOUR CASES.

By SINCLAIR TOUSEY, A. M., M. D.,
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NEW YORK POST-GRADUATE MEDICAL SCHOOL.

The cases of ingrowing toe nail which are referred to the surgeon in private practice or which go to the dispensaries for treatment are the severe ones in which treatment by astringent applications (commonly tincture of iodine) and by suitably trimming the nail has failed to give relief. Every step is exceedingly painful, and, on examination, we find one side of the nail (commonly of the great toe) extending deeply into a mass of indurated tissue surmounted by a layer of exuberant granulations.

The treatment which I have always adopted has been Cotting's operation. Cocaine is injected hypodermically and no constriction is made about the toe. The scalpel is held vertically, with its edge forward and its point at the side of the nail close to the matrix, and is pushed vertically completely through the toe close to the side of the nail; then with a sawing motion the knife is carried forward, converting the part of the toe external to the nail into a flap. The edge of the knife is then turned backward and this flap is entirely severed by an oblique cut outward and backward. The nail is not cut at all and the matrix is not even exposed; but we have hollowed out the side of the toe so that the side of the nail projects at all points beyond the flesh. The area thus denuded is of about the size of a silver quarter of a dollar, and in Cotting's operation is left to heal by granulation. The after-treatment is extremely easy (with simple gauze for the first week and then gauze moistened with balsam of Peru, the dressings being changed every three days), but complete cicatrization takes at least three weeks and the surface requires a protective dressing for a week or two beyond that.

The length of time required for the after-treatment has led me to modify the operation by the employment of Thiersch's method of skin-grafting. It is impracticable to do this at a single sitting, as there are two or three spurting arteries and the capillary hæmorrhage is very free and persistent. My method has been to apply iodoform gauze and very firm pressure by cotton and bandages to control hæmorrhage without applying a single artery clamp, and two days later to do the grafting. The gauze is soaked with sterilized salt solution and is very gently removed from the raw surface. This can readily be accomplished without occasioning a drop of hæmorrhage. In each of the cases the graft has been taken without any anæsthetic and has been of such a size and shape that one graft has completely covered the surface. In three cases the graft was taken from the leg and in one from the arm. The arm, I think, is preferable, for should the patient ever happen to have an ulcer of the leg his or her mind would naturally revert to the time when nearly a square inch of skin was taken from the leg with a razor. (After a considerable amount of hospital and dispensary work, I have come to regard every woman as a candidate for an ulcer of the leg.) As to taking the graft without an anæsthetic: my patients were a boy and a girl, each about fifteen years old, a very nervous young lady about twenty, and a laboring man. None of them seemed to suffer and they all smiled when I asked them if it would have been worth while taking gas for. I have never employed cocaine in skin-grafting and do not know whether the grafts would be devitalized by it or not. [The thigh is an undesirable place to take the graft from, because of the relative difficulty of the dressings in an ambulant case.]

The dressing has consisted of rubber tissue and gauze moistened with sterilized salt solution (0·6 per cent.) and has been changed every other day for a week, at the end of which time the surface has been found healed, and a protective dressing of subnitrate of bismuth and gauze has been adopted for a week.

The cases in which the grafting would not be a successful addition to Cotting's operation are those in which there is paronychia with cellulitis of the entire toe. For ordinary cases it presents no difficulty whatever.

The reason for selecting this operation in preference to Angier's operation (in which a section of the side of the nail and the corresponding portion of the matrix are excised and the wound is closed by sutures) is that in the only cases which have come under my observation in which the latter operation had been performed (five in number) the patients have come to me for treatment for a recurrence of the trouble and have been permanently cured by the other operation.

My cases of Cotting's operation have numbered thirty (including those of grafting) and the only case of failure has been one in which Angier's operation had previously been performed and in which Cotting's operation had to be supplemented by evulsion of the nail.

29 West Thirty-eighth Street.

THE
NEW YORK MEDICAL JOURNAL,
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Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, MAY 19, 1894.

THE PROPOSED REDUCTION OF THE MEDICAL CORPS OF THE ARMY.

We lately expressed our disapproval of the bill reported to the House of Representatives by its committee on military affairs, proposing to reduce the number of medical officers of the army. In our article on this subject we treated it with an eye to the efficiency of the medical department, which we said would be seriously impaired if the proposed action was carried into effect. We have since then been made acquainted with the views of many gentlemen connected with the army, including both line and staff officers, concerning this point, and they are all agreed that to curtail the number of officers of the medical corps would be to run a great risk of embarrassing the operations of the army; furthermore, they all concur in the opinion that recourse to the services of medical men hired from civil life to attend upon the sick and wounded soldiers and their families would, on the whole, result not in any saving of money, but on the contrary in a very considerable additional expenditure. By no means the most inconsiderable of the ways in which such a procedure would prove prejudicial is that of its substituting in the examination of recruits the services of persons not specially trained to such examinations for those of the regular commissioned officers of the medical corps, most of whom have had years of experience and special training in this sort of work. In the matter of making reports also and in many diverse duties which a medical officer of the army is called upon to perform, quite apart from mere attendance upon the sick, the hired civilian practitioner, whatever his purely professional attainments and wisdom might be, would be almost sure to fall short of the requirements of the service.

Although efficiency is the first thing to be considered, there is another aspect of the matter that concerns the medical profession very intimately. The medical corps of the army is a body of men of which the American medical profession is justly proud; its members have proved themselves possessed of executive ability to an unusual degree, as was shown by their management of the military hospitals during the late civil war; they have contributed, as never did the medical corps of any army contribute before, to the advancement of military medicine, as may be learned from the *Medical and Surgical History of the War of the Rebellion* and from the numerous references to that great work which are to be found in subsequent medical literature all over the country; they have shown their appreciation of medical literature in general by the preparation of a work of no lesser importance, the *Index-catalogue of the Library of the Surgeon General's Office.* Is it fair to the medical profession of the country that a corps of which, as its representative, it entertains such an exalted opinion should be so reduced in numbers that the utmost amount of exertion, physical and mental, of which its members are capable should be called for for the performance of their routine duties, leaving them absolutely no time in which to prosecute further work of such a character as that which has won for them, and, through them, for the American medical profession, the respect and admiration of the civilized world? The medical profession of the country can, we believe, give but one answer to this question, and we call upon them to express their feeling on the subject in such a way that Congress will feel compelled to pay attention to it. Let individual members of the profession communicate with individual congressmen, and let medical organizations throughout the country express themselves in their corporate capacity; let Congress be made to understand, in short, that the action proposed is not only, in the opinion of the medical profession, a petty piece of false economy—saving at the spigot and wasting at the bunghole—but also an affront to the profession of medicine. Such action, in our opinion, ought to be taken, and to be effective it should be taken without delay.

ARTIFICIAL RESPIRATION IN CHLOROFORM POISONING.

In the *Hospital* for April 28th there is a paper on this subject by Sir Benjamin Ward Richardson, M. D., F. R. S., in continuation of a previous paper in which the author had pointed out the risks that might arise from the use of electrical excitation in cases of collapse due to chloroform. In this article he places artificial respiration as the first and foremost among the only rational methods that he thinks practicable to bring about recovery. He does not assume, however, that death from chloroform is due purely to failure of respiration, because there is always some primary failure of the heart; but this, he says, does not mean actual arrest of the heart's motion. The fact that after death by chloroform the heart is usually found still moving in the lower animals has led, he continues, to the natural idea that the organ is still performing vital functions, and therefore that death must occur from failure of the respiration. But he points out that there is a deception on this point. Mere rhythmical motions of the auricles and ventricles of the heart, he goes on to say, do not necessarily mean vital motion. He has noticed that the heart has three grades of motion: (*a*) full vital motion of propulsion, such as goes on during perfect consciousness; (*b*) partial vital motion of propulsion, such as goes on while there is life with breathing, but without consciousness, as in syncope, catalepsy, and anæsthesia; (*c*) passive motion of the auricles and ventricles without propulsion and with arrested respiration, or what may be called respiratory death—in other words, the motion of collapse, most commonly presented in collapse from chloroform. In this state the heart is reduced in volume—that is, it is contracted and contains very little blood. It is as if it were passing into rigor mortis, and, in fact, when it does not come back to its natural action, it does pass into this condition, which means its more complete arrest and, as a natural consequence, its death and that of the body as a whole. That the respiratory muscles have failed in their function during this state is due indeed to the circumstance that they are not receiving from the heart the amount of blood which they require, and therefore have failed in their working power. Meanwhile the lungs, owing to the passive contraction of their elastic structure, which continues independently of the blood supply, become resistant and to an extent collapsed. Moreover, the elastic resistance of the pulmonary artery progresses, giving rise to opposition to the entrance of the blood into the lungs, an opposition which the enfeebled heart has little power to overcome. That this opposition is exceedingly great may be shown by endeavoring with a syringe fixed in the pulmonary artery to force a current over the lesser circulation.

These facts, says the author, lie at the root of all endeavors to start the lesser circulation in chloroform collapse. If we do not understand them we are easily led to suppose that the whole difficulty lies in the failure of the respiratory current, whereas, partly at any rate, the failure is in the heart itself and may be there primarily, although immediately after death that organ may appear to be alive. This being the case, it might be supposed that artificial respiration would never of itself suffice to restore the individual, but the author has seen it do so in the most evident manner. While watching the motions of the heart in the third degree described, artificial respiration being carried on, he has seen the heart pass into the second degree and then into the first, with almost immediate recovery of the vital muscular movements throughout the body and with a renewal of attempts at spontaneous respiratory movements. These phenomena, he says, are most remarkable and not to be understood properly without being actually seen. There is first, as it were, a leap of cardiac motion from the third or feeblest stage into the second, or, as he would call it, the syncopal or cataleptic. In this second stage the heart increases in volume and there is feeble pulsation in the pulmonary artery. Then there is a second leap in which the cavities of the heart suddenly become tense with blood; the organ enlarges to twice the size that it had in the third degree. The pulmonary artery is distended and pulsates forcibly; the lungs become charged with blood; the left half of the heart fills; the aorta begins to pulsate strongly and accurately; all the muscles receive their new supply of blood; respiratory movements are made accurately—in a word, vitality is restored. The author affirms that artificial respiration is the only means now at our command to bring about resuscitation. In the lower animals he has seen it succeed as late as seven minutes after all external evidences of life had ceased, but its success or failure depends upon varying circumstances. It is a very great obstacle to its success for the temperature of the day to be very high, for in that case the blood coagulates quickly and plugging of the pulmonary circuit takes place. Extreme cold also is an obstacle. The most favorable temperature is that of about 60° F. Again, any rough motion of the body is an obstacle, for that tends to arrest what little remaining motion there may be in the heart. Finally, too violent artificial respiration is itself an obstacle, for when the lungs are inflated vigorously and rapidly the very pressure which they make on the heart in the closed thorax is sufficient to stop the feeble cardiac pulsation.

It follows from these observations, says the author, that the ordinary methods of artificial respiration, such as Sylvester's and Marshall Hall's, must be injurious, as they tend to reduce the power of the feebly moving heart. What is really wanted is quick, gentle emptying of the lungs of the air charged with chloroform which they hold, with gentle refilling of the chest with fresh air introduced without undue pressure, so that it may reach the feeble current of blood which may possibly be making its way over the pulmonary circuit. In the absence of apparatus, mouth-to-mouth insufflation is the best method. By fixing a rubber tube to the nostril of one of the lower animals, and emptying and filling the animal's chest through it, very gently, recovery from the deepest collapse can almost always be effected if the temperature of the air is moderate. It does not appear that the presence of carbon compounds in the operator's breath does any material amount of injury, and in the exhaled breath there is always oxygen enough to start respiration anew. The objection lies in the personal act of setting up breath-to-breath respiratory actions, and the author has endeavored to meet this objection by means of double-acting hand-bellows, made of rubber, which are exhausted by one bulb and filled by another, so that by the same motion of the hand the patient's chest is emptied and refilled. Any ordinary bellows will answer if these are not at hand. The nozzle is placed in one nostril, and the other nostril and the mouth are closed with the hand; then by expanding the bellows the air may be drawn out of the chest, and by gently compressing them the chest may be filled. It is not at all necessary to imitate the natural rate of the movements of respiration; the gentler the movements of suction and insufflation the better, eight to ten of each in a minute being quite sufficient.

MINOR PARAGRAPHS.

A LADY NOTARY AND A LUNACY CERTIFICATE.

There are several lady notaries in New York. From our limited experience with them we believe that, as a rule, they conduct the business of their office in a manner that leaves nothing to be desired. One of our professional brethren, however, has lately had to deal with a female notary who seems not only to have a gross misconception of her duties, but also to consider herself privileged to asperse the motives of persons concerning whose doings she knows nothing. Our colleague gives the story of his encounter in Thursday's *Sun*. He and another physician, having examined a lunatic, made out the certificate prescribed by law in such cases, and went in quest of the nearest notary, who happened to be a woman, that they might swear to it in due form. The notary began to read the long document; she read it through again and again, in spite of her visitors' hints that they were in haste and wished her to perform her function without delay. Finally she assumed an air of severity and said she did not like to sign such things unless she knew all about them—she had got into so much trouble about them. After she had made repeated remarks to this effect she was told by one of the gentlemen, whose patience was by this time exhausted, that if she felt at all suspicious about the paper they would not ask her to sign it; they would take it and go elsewhere. At this she ungraciously cast the document at the gentlemen and said angrily: "Here, take it, and go elsewhere; if I was not suspicious at first, your great haste would certainly make me so." Surely, none of our readers needs to be told that a notary has nothing to do with the contents of a document to which his or her signature and official seal as a notary are to be affixed.

THE CITY LUNATIC ASYLUMS.

The state of affairs at the lunatic asylums on Ward's Island, as portrayed in the *New York Herald* during the week, seems to call for immediate investigation, and the Mayor is to be commended for having so promptly called upon the State Commission in Lunacy to institute one. The *Herald's* charges bear upon almost everything connected with the shelter, feeding, and medical care of the pauper insane, and it can not be said that they are inspired by malicious or ill-informed persons. There is too much reason to believe that they are not in the least overdrawn. The people of New York are willing and anxious to do everything possible to alleviate the sad lot of their insane, and it is monstrous that they should be foiled in their efforts in that direction. It is to be hoped that the proper authorities will lose no time in setting a searching inquiry in motion.

THE MARINE-HOSPITAL BUREAU'S *ABSTRACT OF SANITARY REPORTS.*

We have received the eighth volume of this weekly publication, for the year 1893. It contains 1,300 pages of text, together with a very satisfactory index. These abstracts are of more than temporary value, and the bound volumes will undoubtedly be found useful in a high degree by sanitarians for many years to come.

A BOVINE TUBERCULOSIS COMMISSION.

A law recently enacted by the State of New York provides for the appointment of a commission, consisting of a physician, a veterinarian, and three members of the State Dairymen's Association, to report in regard to needed legislation on tuberculosis in cattle. The sum of $9,000 is appropriated to meet the commission's expenses.

ITEMS, ETC.

The Third Congress of American Physicians and Surgeons will be held in Washington on Tuesday, Wednesday, Thursday, and Friday, May 29th, 30th, 31st, and June 1st, under the presidency of Dr. Alfred L. Loomis, of New York. The general sessions will be held in the afternoon in Metzerott's Music Hall, corner of Twelfth and F Streets. On Thursday evening the president's address will be delivered, on The Influence of Animal Experimentation on Medical Science, and after that there will be a reception.

At the session of Tuesday afternoon, May 29th, at 3.30 P. M., under the direction of the Association of American Anatomists, the subject of Morphology as a Factor in the Study of Disease will be opened with a paper by Dr. Harrison Allen, of Philadelphia, and discussed by Dr. Thomas Dwight, of Boston, Dr. Frederic H. Gerrish, of Brunswick, Me., Dr. Frank Baker, of Washington, and Dr. Burt G. Wilder, of Ithaca, N. Y.

On Wednesday afternoon, May 30th, there will be two sessions, one at two P. M., under the direction of the American Climatological Association, at which papers on Sewer Gas will be read (Chemical, Physical, and Bacteriological Studies upon Air over Decomposing Substances, with Special Reference to their Application to the Air of Sewers, by Dr. Alexander C. Abbott, of Philadelphia; The Effect of Sewer Gas in the Production of Disease, by Dr. Abraham Jacobi, of New York; and Sewer Gas as a Cause of Throat Disease, by Dr. Beverley Robinson, of New York [discussion by Dr. Victor C. Vaughan, Dr. William H. Welch, Dr. J. Solis-Cohen, Dr. Carl Seiler, and others]). The other session, at 3.30 P. M., will be under the direction of the American Dermatological Association. The programme includes the following: The Distribution and Control of Leprosy in North America (the distribution, by Dr. J. Nevins Hyde, of Chicago [discussion by Dr. James E. Graham, of Toronto]; the Diagnostic Features and Treatment, by Dr. P. A. Morrow, of New York [discussion by Dr. A. Van Harlingen, of Philadelphia]; the Contagiousness, Prophylaxis, and Control, by Dr. James C. White, of Boston [discussion by Dr. George H. Fox, of New York, Dr. Joseph D. Bryant, of New York, and Dr. Walter C. Wyman, of the Marine-Hospital Service]). At 7 P. M. there will be a dinner to the guests of the congress at the Arlington Hotel.

On Thursday afternoon, May 31st, there will be two sessions, one, at 2 P. M., under the direction of the American Association of Genito-urinary Surgeons, at which the subject of Nephritis in its Surgical Aspects will be opened with a paper by Dr. Edward L. Keyes, of New York, to be followed by one on The Bacteriology of Nephritis, by Dr. George M. Sternberg, of the army (discussion by Dr. George Chismore, of San Francisco, Dr. L. Bolton Bangs, of New York, and Dr. Francis S. Watson, of Boston). At the other session, at 3.30 P. M., under the direction of the American Gynæcological Society, the subject of The Conservative Surgery of the Female Pelvic Organs will be treated of in papers read by Dr. William M. Polk, of New York, and Dr. William Goodell, of Philadelphia.

On Friday afternoon, June 1st, there will be a business meeting at 1.30 P. M., after which two scientific sessions will be held. At the first, at 2 P. M., under the direction of the American Laryngological Association, the subject of The Surgery of the Accessory Sinuses of the Nose will be discussed by Dr. F. H. Bosworth, of New York, Dr. J. N. Mackenzie, of Baltimore, Dr. J. H. Bryan, of Washington, and Dr. John O. Roe, of Rochester, N. Y. The second session, at 3.30 P. M., will be under the direction of the American Neurological Association. Papers are to be read as follows on the subject of The Influence of Infectious Processes on the Nervous System: The Pathology and Ætiology, by Dr. James J. Putnam, of Boston; the Relation to General Nervous Diseases, by Dr. E. C. Seguin, of New York; the Relation to Mental Disease, by Dr. Charles K. Mills, of Philadelphia; and the Therapeutics, by Dr. F. X. Dercum, of Philadelphia.

Of the constituent bodies, the *American Ophthalmological Society* will meet at the Arlington Hotel, Ladies' Parlor No. 2, beginning on Wednesday, under the presidency of Dr. George C. Harlan, of Philadelphia. The programme is as follows: Two Recent Magnet Operations—one an Ideal Success, the other a Total Failure, by Dr. H. Knapp; A Demonstration of some Photo-micrographs of the Human Retina, by Dr. William F. Norris; The Practical Value of the Ophthalmometer, by Dr. Edward Jackson; Family History of Irideremia and Coloboma Iridis; Cataract Operation on Two Members, by Dr. D. De Beck; A Clinical and Microscopical Study of Two Cases of Glaucoma associated with Intra-ocular Hæmorrhages, and Some Additional Studies upon the Clinical Value of Repeated Careful

Correction of Manifest Refractive Error in Plastic Iritis, by Dr. C. A. Oliver; Tumor of the Optic Nerve, by Dr. Swan M. Burnett; Degeneration in the Retinal Vessels with Hæmorrhages in the Retina and Vitreous in Gouty Patients, and Recent Experiences in the Treatment of Detachment of the Retina, by Dr. C. S. Bull; Pseudo-erysipelas Periocularis Medicamentosa, by Dr. Edward Friedenberg; Some Typical Examples of Subnormal Accommodative Power, The Ophthalmoscope does not always reveal Latent Hypermetropia, with Notes of a Case, and A Case of Ophthalmitis Suppurativa following Discission of Capsular Opacity, by Dr. S. Theobald; Removal of Steel from the Vitreous, by Dr. E. E. Holt; Colloid Disease in the Macular Region Analogous in Appearance to the so-called Drüsen in the Nerve Head, Epithelioma of the Lid, Excision and Transplantation of Skin without a Pedicle, and Concerning Monocular Diplopia, with Cases, by Dr. G. E. De Schweinitz; Two Cases of Sympathetic Inflammation, and A Portable Perimeter, with its Apology for Existence, by Dr. F. M. Wilson; So-called Muscular Asthenopia, by Dr. G. W. Hale; The Practical Value of Low-grade Cylinders, by Dr. J. A. White; Results of Repeated Examinations of the Eyes of the Boys in the Penn Charter School, of Philadelphia, by Dr. B. A. Randall; Foreign Bodies in the Orbital Cavity, by Dr. W. B. Johnson; Rupture of the Lymph Sheath of a Retinal Vein, by Dr. A. G. Heyt; The Halo Symptom in Glaucoma, by Dr. S. O. Richey; A Case of Melanotic Round-celled, Giant-celled Sarcoma of the Lid with Myxomatous Degeneration, by Dr. W. H. Wilmer; Three Cases of Ectropion Uveæ, by Dr. L. Howe; A Double Case of Neuro-paralytic Keratitis lasting Ten Years, by Dr. P. A. Callan; and A Modification of the Operation for Canthoplasty, A Case of Binocular Coloboma of the Lens without Coloboma of Iris or Chorioid and with Accommodation Retained, and A Case of Binocular Luxation of the Lens, by Dr. C. F. Clark.

The American Otological Society will meet at the Arlington Hotel, in Ladies Parlor No. 1, beginning on Tuesday, under the presidency of Dr. Gorham Bacon, of New York. The programme is as follows: Otitic Brain Abscess—Opening of the Mastoid, Tympanum, and Skull—Evacuation of the Abscess—Hernia Cerebri—Evacuation of Another Abscess—Recovery, by Dr. H. Knapp; Five Deaths following Suppurative Otitis, and Two Autopsies, by Dr. F. M. Wilson; The Conservative Treatment of Mastoid Inflammation, by Dr. Ralph W. Seiss; Remarks on the Treatment of Chronic Purulency of the Ear, by Dr. Samuel Sexton; Chronic Tympanic Vertigo (so-called Ménière's disease); its Relief by Surgical Liberation of the Stapes, by Dr. Charles H. Burnett; The Value of Middle-Ear Operations as a Means of Improving the Utility of the Organ of Hearing, by Dr. Edward B. Dench; Statistical Studies of the Foramen of Rivinus and of the Axis of the External Meatus in their Relations to Intratympanic Surgery, by Dr. B. Alexander Randall; An Insufflator for applying Powder to the External Auditory Canal, by Dr. Walter B. Johnson; and Exhibition of Photographs of the Temporal Bone and Membrana Tympani, by Dr. Gorham Bacon.

The American Neurological Association will meet at the Cosmos Club, corner of H Street and Vermont Avenue, beginning on Tuesday, under the presidency of Dr. B. Sachs, of New York. The programme is as follows: Report of a Case of Spinal Syphilis and one of Intracranial Syphilis, with Microscopical Specimens, by Dr. Landon Carter Gray, of New York; Merycism, by Dr. William A. Hammond, of Washington; Inebriety as a Disease Analytically Studied, by Dr. R. M. Phelps, of Rochester, Minn.; A Case of Myxœdema treated with Sheep's Thyreoid, and Craniectomy in a Child Two Years Old, by Dr. Samuel Ayres, of Pittsburgh; The Genesis of Hallucinations, Illusions, and Delusions, by Dr. H. A. Tomlinson, of St. Peter; A Case of Pontine Embolism, with Paralysis of Ocular and of Orbiculo-palpebral Movements of One Side and of the Limbs on the Other, with Remarks on Focal Lesions in the Pons, by Dr. C. K. Mills and Dr. John Zimmer, of Philadelphia; Thyreoidectomy in a Case of Graves's Disease, by Dr. J. Arthur Booth, of New York; Crossed Knee-jerks, by Dr. Guy Hinsdale and Dr. J. Madison Taylor, of Philadelphia; The Insanity of Puberty and Adolescence, by Dr. Henry R. Stedman, of Boston; Lumbar Puncture (Quincke) for the Withdrawal of Cerebro-spinal Fluid, by Dr. William Browning, of Brooklyn; Gastro-intestinal Neurasthenia—*i. e.*, Nervous Dyspepsia, by Dr. Leonard Weber, of New York; Some Problems relating to the Cerebral Fissures, and Exhibition of a Suicide's Brain, with Two Pistol-ball Wounds, by Dr. Burt G. Wilder, of Ithaca, N. Y.; Exhibition of a Neurological Percussion Hammer, by Dr. William C. Krauss, of Buffalo; Cerebral Œdema, by Dr. George J. Preston, of Baltimore; The Non-operative Treatment of Metatarsalgia, by Dr. V. P. Gibney, of New York; A Case of Exophthalmic Goître Cured by Thyreoidectomy, by Dr. Frederick Peterson, of New York; Cerebral Hæmorrhage: Notes on its Cause and Premonitory Symptoms, and The Cortical Localization of the Cutaneous Sensations, by Dr. Charles L. Dana, of New York; Exhibition of Sections from the Mid-brain, Pons, Medulla Oblongata, and Spinal Cord from a Case of Chorea, by Dr. James Hendrie Lloyd, of Philadelphia; Report of a Case of Amyotrophic Lateral Sclerosis in a Child, by Dr. Charles Henry Brown, of New York; The Significance of the Exaggerated Knee-jerk and Ankle-clonus, and their Relation to Diagnosis, by Dr. Græme M. Hammond, of New York; A Case of Congenital Hydrencephalocele, and A Case of Infantile Hemiplegia, Imbecility, and Epilepsy—Craniotomy—Marked Improvement, by Dr. Edward B. Angell, of Rochester, N. Y.; Experimental Investigations of the Physical and Chemical Action of the Galvanic Current upon the Living Organism, by Dr. George W. Jacoby and Dr. F. Schwyzer, of New York; Report of a Case of Diffuse Myelitis following Spastic and Choreic Symptoms of Three Years' Duration, with Specimens, by Dr. F. X. Dercum, of Philadelphia; and Traumatism as a Cause of Locomotor Ataxia; a Critical Examination of the Evidence, including a Report of Three Cases, by Dr. Morton Prince, of Boston.

The American Gynæcological Society will meet in the Lecture Room of the Columbian University, corner of 15th and H Streets, under the presidency of Dr. William T. Lusk, of New York. The programme was published in the *Journal* for April 28th.

The American Dermatological Association will meet in the new Reception Room of the Arlington Hotel, under the presidency of Dr. Robert B. Morison, of Baltimore. The programme was published in the *Journal* for April 28th.

The American Laryngological Association will meet in the Arlington Hotel, Parlors D and E, under the presidency of Dr. D. Bryson Delavan, of New York. The programme was published in the *Journal* for May 5th.

The American Climatological Association will meet in the Parlor at Wormley's Hotel, corner of Fifteenth and H Streets, beginning on Tuesday, under the presidency of Dr. Andrew H. Smith, of New York. The programme is as follows: Alimentation in Pulmonary Disease (president's address), by Dr. Andrew H. Smith, of New York; The Relation which Alimentation should bear to Oxygenation in Lung Diseases, by Dr. Boardman Reed, of Atlantic City; The Methods and Value of Supervised Exercises and Diet in the Prophylaxis of Pulmonary Phthisis, by Dr. Glentworth R. Butler, of Brooklyn; The Importance of Mouth Cleanliness in the Prevention of Disease, by Dr. Clarence C. Rice, of New York; A Plea for the Earlier Recognition of Pulmonary Tuberculosis and the Adoption of

Proper Climatic Treatment, by Dr. H. B. Moore, of Colorado Springs; Three Years' Experience in the Sanitarium Treatment of Pulmonary Disease near Boston, by Dr. Vincent Y. Bowditch, of Boston; Creosote, Guaiacol, and Benzoyl of Guaiacol in Phthisis, by Dr. Roland G. Curtin, of Philadelphia; Shall Anything be Done by Legal Authority to Prevent the Spread of Tuberculosis? by Dr. Frederick I. Knight, of Boston; Further Report of Cases of Phthisis Treated at Colorado Springs, by Dr. S. E. Solly, of Colorado Springs; The Condition of the Heart in Diabetes and its Relation to Diabetic Coma, by Dr. Leonard Weber, of New York; Report of Cases of Chronic Heart Disease Treated by the Schott Method of Baths and Gymnastics, by Dr. Robert H. Babcock, of Chicago; A New and Distinguishing Sign of Latent Aneurysm of the Aorta, by Dr. W. C. Glasgow, of St. Louis; Musical Nomenclature in Physical Diagnosis, by Dr. J. Hilyard Tyndale, of New York; Ozone in Phthisis, with Special Reference to the Pneumatic Cabinet, by Dr. Charles E. Quimby, of New York; The Comparative Rarity of Phthisis in the Highlands of Pennsylvania and the Adjacent Counties of New York, by Dr. Guy Hinsdale, of Philadelphia; Meteorological Data of Colorado, by Dr. Samuel A. Fisk, of Denver; Sensible Temperatures, by the Hon. Mark W. Harrington, Chief of the Weather Bureau, Washington; Beri-Beri, by Dr. Judson Daland, of Philadelphia; Some Practical Observations on So-called Malaria, by Dr. W. H. Daly, of Pittsburgh; Shock in Acute Disease, by Dr. John H. Musser, of Philadelphia; and The Physical Signs of Cellular Œdema of the Lung Considered in their Relation to the Pathological Changes, by Dr. W. C. Glasgow, of St. Louis.

The Association of American Physicians will meet in Hall No. 2 of the Columbian University, corner of Fifteenth and H Streets, beginning on Tuesday, under the presidency of Dr. Reginald H. Fitz, of Boston. The programme was published in the *Journal* for May 12th.

The American Association of Genito-urinary Surgeons will meet at the Shoreham Hotel, beginning on Tuesday, under the presidency of Dr. George Chismore, of San Francisco. The programme was published in the *Journal* for May 12th.

The American Orthopædic Association will meet in the Preparatory Department of the Columbian University, H Street, between Thirteenth and Fourteenth Streets, beginning on Tuesday, under the presidency of Dr. A. M. Phelps, of New York. The programme was published in the *Journal* for May 12th.

The American Physiological Society will meet in the Physical Laboratory of Columbian University, Fifteenth and H Streets, beginning on Tuesday, under the presidency of Dr. Henry P. Bowditch, of Boston. The programme is as follows: The Effect of Fatigue on the Rate of Transmission of Nerve Force, by Dr. H. P. Bowditch; The Physiological and Therapeutical Action of Nuclein, by Dr. V. C. Vaughan; Remarks on the Qualitative Determination of Ptyalinogen and Pexinogen, by Dr. J. W. Warren; Some Points on the Chemistry of Muscle, by Dr. G. N. Stewart; Demonstration of the Effect of Calcium Salts on the Contractility of the Heart, by Dr. W. H. Howell; Circulation Time in Organs, by Dr. G. N. Stewart; A Study of the Volume Changes in Muscle during Activity and Rest, by Dr. G. W. Fitz; Exhibition of Plethysmographic Curves during Sleep, by Dr. W. H. Howell; On the Employment of Cerebral Pressure as a Means of Anæsthesia, by Dr. G. T. Kemp; Exhibition of a New Cannula Coupler (modification of the old French form), by Dr. G. T. Kemp; On the Pleurocardiogram and the Nature of Cardio-pneumatic Movements, by Dr. S. J. Meltzer; Preliminary Note on Cerebral Centers of the Bladder, by Dr. Isaac Ott; Some Facts bearing on the Action of Strychnine on the Spinal Cord, by Dr. A. R. Cuhsny; On Respiratory Paths in the Spinal Cord, by Dr. W. T. Porter; Experiments upon Reflex Vaso-constriction and Vaso-dilatation, by Dr. W. H. Howell; and Preliminary Report of Experiments on the Reflex Time of Winking, A Short-circuiting Commutator affording Making or Breaking Induction Shocks, A Hand Rest to be used with the Ergograph, and A Non-oxidizable Mercury Key, by Dr. W. P. Lombard.

The American Pædiatric Society will meet at the Arlington Hotel, in Parlors A and B, beginning on Tuesday, under the vice-presidency of Dr. F. Forchheimer, of Cincinnati. The programme was published in the *Journal* for April 28th.

The Association of American Anatomists will meet in the Preparatory Department of the Columbian University, H Street, between Thirteenth and Fourteenth Streets, beginning on Tuesday, under the presidency of Dr. Harrison Allen, of Philadelphia. The programme is as follows: The Study of the Human Cranium, and On the Shortening of the Face-axis in the Evolution of the Mammalia, by Dr. Harrison Allen, of Philadelphia; Identity of Structure of Protoplasm with that of Striped Muscle, by Dr. Carl Heitzmann, of New York; The Relation of the Olfactory to the Cerebral Portion of the Brain, and Notes on the Anatomy of the Orang, by Dr. B. G. Wilder, of Ithaca, N. Y.; The Perinæum and the Perineal Body, by Dr. D. K. Shute, of Washington; The Theoretical Anatomy of the Sympathetic System, by Dr. W. P. Carr, of Washington; Methods of Estimating the Height from Parts of the Skeleton, by Dr. Thomas Dwight, of Boston; In our Two Years' Study of Anatomy, What Part of the Subject should be covered in the First Year's Work? What Part in the Second? by Dr. A. D. Brown, of Chicago; A Plea for a Methodically Written Text-book on Anatomy, by Dr. Edmund Souchon, of New Orleans; The Terminology of the Nerve Cell, by Dr. Pierre A. Fish, of Ithaca, N. Y.; A Study of the Muscular Tunic of the Large and Small Intestine of Man in the Region of the Cæcum, and A Note in the Occurrence of the Scapulo-clavicular Muscle, by Robert Orton Moody, Yale University, New Haven; and The Female External Genital Organs, a Criticism on Current Anatomical Description, by Dr. D. S. Lamb, of Washington.

The American Surgical Association will meet in the Main Hall, Preparatory Department, Columbian University, 1325 H Street, beginning on Tuesday, under the presidency of Dr. J. Ewing Mears, of Philadelphia. The programme was published in the *Journal* for March 24th.

On Thursday evening there will be a reception by the President of the United States at the Executive Mansion.

The Gouverneur Hospital.—The sum of $200,000 has been appropriated for the construction of additional buildings.

The Medical Society of the State of Pennsylvania.—At the annual meeting, held this week, Dr. John B. Roberts, of Philadelphia, was elected president for the ensuing year.

Niagara University.—The annual commencement of the Medical Department was held on the 9th inst. The degree of M. D. was conferred on fourteen candidates. The valedictory address was delivered by Harlow C. Curtiss, M. A., professor of medical jurisprudence.

Changes of Address.—Dr. Hermann Goldenberg, to No. 22 East Sixty-third Street; Dr. Frederick Peterson, to No. 60 West Fiftieth Street; Dr. J. E. Sheppard, to No. 147 Remsen Street, Brooklyn.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending May 12, 1894:*

Marmion, R. A., Surgeon, is directed to hold himself ready to relieve Bright, G. A., Medical Inspector, on the U. S. Steamer Newark.

Harmon, G. E. N., Surgeon. Ordered to the U. S. Steamer Monongahela. June 1, 1894.

Barnum, W. M., Assistant Surgeon. Ordered to the U. S. Steamer Monongahela. June 1, 1894.

Steele, J. M., Surgeon. Detached from the U. S. Steamer St. Louis and ordered to League Island Navy Yard.

Beyer, H. G., Surgeon. Detached from the Naval Academy and ordered to the U. S. Steamer Bancroft.

Biddle, Clement, Passed Assistant Surgeon. Detached from the League Island Navy Yard and ordered to the Marine Rendezvous, Philadelphia, Pa.

Leys, J. L., Assistant Surgeon, is granted one month's leave of absence, with permission to go abroad.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 29 to May 12, 1894:*

Cleary, Peter J. A., Major and Surgeon. So much of Par. 13, S. O. 79, A. G. O., April 3, 1894, as assigns him to duty at Fort Wingate, New Mexico, is revoked.

De Witt, Calvin, Major and Surgeon, is granted leave of absence for two months, to take effect on or about May 1, 1894, with permission to go beyond the sea.

Everts, Edward, Captain and Assistant Surgeon, is granted leave of absence for two months, on surgeon's certificate of disability, to take effect when his services can be spared, with permission to leave the Department of the Colorado.

Kulp, John S., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Sheridan, Illinois, and ordered to Fort Spokane, Washington, for duty.

Macauley, C. N. Berkeley, Captain and Assistant Surgeon, is relieved from duty at the United States Military Academy, West Point, N. Y., and ordered to duty at Fort Wingate, New Mexico, relieving Matthews, Washington, Major and Surgeon, who, on being thus relieved, will repair to Washington, D. C., and report in person to the Surgeon General for temporary duty in his office.

McVay, Harlan E., First Lieutenant and Assistant Surgeon. Par. 2, S. O. No. 86, A. G. O., April 12, 1894, assigning him to the station at Angel Island, California, is revoked. He will be relieved from duty at Fort Huachuca, Arizona, and will report for duty at the Presidio, California, relieving Willcox, Charles, First Lieutenant and Assistant Surgeon, who, after thus being relieved, will report for duty at Angel Island, California.

Wells, George M., First Lieutenant and Assistant Surgeon, will proceed to Fort Bowie, Arizona Territory, and report for temporary duty not later than the 15th inst., during the absence, on leave, of Poindexter, Jefferson D., Captain and Assistant Surgeon.

A board of medical officers, to consist of Corson, Joseph K., Major and Surgeon; Havard, Valery, Major and Surgeon; and Moseley, Edward B., Major and Surgeon, is appointed to meet at West Point, N. Y., June 1, 1894, or as soon thereafter as practicable, for the physical examination of the cadets of the graduating class at the United States Military Academy, and such other cadets of the academy and candidates for admission thereto as may be ordered before it.

Torney, George H., Captain and Assistant Surgeon, and Crampton, Louis W., Captain and Assistant Surgeon, will report in person to Alden, Charles H., Colonel and Assistant Surgeon General, president of the examining board appointed to meet at the office of the Surgeon General, United States Army, on Tuesday, May 8, 1894, at such time as they may be required by the board for examination as to their fitness for promotion.

Gibson, Joseph R., Major and Surgeon, is granted leave of absence for twenty days, to take effect on being relieved from duty at Davids Island, New York.

Ten Eyck, Benjamin L., First Lieutenant and Assistant Surgeon, now on temporary duty at Fort Clark, Texas, is assigned to duty at that post.

Lippit, William F., Jr., First Lieutenant and Assistant Surgeon, is relieved from duty at Camp Eagle Pass, Texas, and ordered to Fort Leavenworth, Kansas, for duty.

Spencer, William G., Captain and Assistant Surgeon, will report in person to the president of the army retiring board at Omaha, Neb., at such time as he may designate, for examination by the board.

Waters, William E., Major and Surgeon, is granted leave of absence for two months, to take effect on or about July 1, 1894.

Society Meetings for the Coming Week:

Monday, *May 21st:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society.

Tuesday, *May 22d:* Connecticut Medical Society (first day—New Haven); New York Dermatological Society (annual—private); Buffalo Obstetrical Society.

Wednesday, *May 23d:* Connecticut Medical Society (second day); New York Pathological Society; New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society; American Microscopical Society of the City of New York; Metropolitan Medical Society, New York (private); Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

Thursday, *May 24th:* Connecticut Medical Society (third day); New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia.

Friday, *May 25th:* New York Clinical Society (private); New York Society of German Physicians; Yorkville Medical Association (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *May 26th:* New York Medical and Surgical Society (private).

Letters to the Editor.

THE CONGRESSISTS AND THE ITALIAN MEDICAL PROFESSION.

Perugia, *May 2, 1894.*

To the Editor of the New York Medical Journal:

Sir: I have just read in your *New York Medical Journal** what your correspondent wrote to you about the Rome Congress, and I am quite sure that there must be some mistake on the part of your correspondent. I think that all must agree to the fact that there has been some inconvenience produced by the great number of "congressists," but this entirely depended on an incomplete organization, not perhaps adequate to the great number of medical men who came to the congress. But from these trifling things to the assertion that the "Italians were rude to the Americans and Englishmen present" there is such a distance that I can not even conceive how it could happen to any American or Englishman who had the slightest acquaintance with our feelings to imagine that in all the congress there was only one of all Italian doctors who disliked his English or American colleagues.

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* April 21, p. 501.

I do not know if you have a correspondent here in Italy, established here for some months, but I am quite sure I tell the truth when I assert that whoever wrote to you such a thing has never been in Italy before, and has no knowledge of our feelings.

It is really a pity that the English language is not so well known in Italy as French is, and perhaps even German is. This, perhaps, may explain the little attention paid to communications made in the English language, which your correspondent thinks he noticed, what did not happen to me. I saw many gentlemen leave the room as soon as a communication was made in a language that they did not know, as I saw some Italians answer in English to English medical men. Perhaps it may be that when some persons assist to a discussion that they do not understand, they talk for some moments together. But I decidedly deny that in all the congress there was one Italian doctor who had the slightest dislike for Englishmen or for Americans, either as a nation or professionally. I wish that your correspondent would stop for some time in Italy; if that happens, I am quite sure that in a few months he would himself agree with what I assert now. In fact, the truth is that, not only medical men, but all our nation has always been extremely fond of Englishmen and Americans. This for the truth, although I am not a member of the committee of the congress, and am quite in the opposition to some ideas of those who managed all the congress. Charles Ruata, M. D.

CAMPHORATED PHENOL.

Bellport, N. Y., *May 1, 1894.*

To the Editor of the New York Medical Journal:

Sir: It is with some degree of gratification I note Dr. Thomas A. Elder's communication in last week's *Journal* on the topical application of camphorated phenol for the relief of itching and as an antiseptic in small-pox. As far as I know, I believe I was the first to call attention through the medical press to this exceedingly valuable antiseptic, as a combination, in an article which appeared in the *Medical Record* of August 19, 1893, entitled Bufalini's Camphorated Carbolic Acid as an Antiseptic Agent. A formula for this appears in the sixteenth edition of the *United States Dispensatory*, page 53, which is practically the same as noted in Dr. Elder's letter.

It is rather astonishing that a preparation backed by such an authority as Bufalini has not been more thoroughly employed in surgical and other uses where such an agent might be applicable. This can only be explained, I assume, by the fact of the wild rush of the newer antiseptics which are being constantly crowded upon our notice by enterprising commercialism and the tendency to novelty.

Since I urged its use to a larger extent on the consideration of surgeons particularly, I have employed it in the form of ointments of lard or vaseline in the proportion of one to three or four in inunctions for the acute exanthemata with the most gratifying results. In an epidemic of scarlet fever where I employed it once or twice daily in each case after bathing I found it reduce temperature and produce a sense of well-being to the patient highly gratifying. Moreover, it was efficient in preventing contagion and, I thoroughly believe, destroys the infective element in this disease when intelligently and thoroughly rubbed into the entire desquamating surface.

I believe it has a very wide sphere of usefulness in the treatment of inflammatory and parasitic skin diseases, especially those characterized by itching.

Another communication appeared in the *Record* of September 30, 1893, giving some account of its employment as an internal remedy in typhoid fever.

This combination is well worthy of conscientious employment, and I again unite with others who have endeavored to call attention to its exceptional and varied therapeutical properties, in the hope that it may be accepted as one of the ideal antiseptics. S. W. S. Toms, Ph. G., M. D.

Proceedings of Societies

SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

Meeting of April 4, 1894.

The President, Dr. Frederick Holme Wiggin, in the Chair.

Traumatic Paralysis of the Forearm and Hand.—Dr. Parker Syms presented such a case. Alfred Mitchel, sixteen years of age, a groom, had had a good family history, and had himself enjoyed perfect health. In the latter part of September, 1893, he had been kicked by a horse in the abdomen and on the posterior aspect of the right elbow. The blow on the abdomen had caused contusion and rupture of the ileum and peritonitis, for which Dr. F. H. Wiggin had operated, resecting a portion of the ileum and curing the patient. After recovering from the etherization it had been discovered that his right hand was paralyzed both as to motion and sensation. When seen by the speaker in January the patient had been in perfect health, except that he had been unable to extend the right hand or fingers. There had been a recently healed scar directly over the olecranon, but no other visible sign of injury at the elbow. His hand and forearm had been normal before the injury. It had been evident that the musculo-spiral nerve had been injured. He had been unable to extend the hand, having complete wrist-drop; when the hand was held flexed he could slightly move the fingers in extension; when the hand was held extended he could produce no extension motion in the fingers. There had been sensation throughout the hand and forearm. As sensation had been lost at the time of the injury but had returned, it had been decided to treat him expectantly. Under the use of galvanism he had slowly regained the lost function.

Extensive Cicatricial Keloids.—Dr. Parker Syms also presented a patient with this condition: Charles C., colored, twenty-seven years of age, had been admitted to the Colored Hospital in January, 1894. His family history had been negative, and his general health good. Six years ago the patient had entered this hospital suffering from extensive tubercular disease of the lymphatics on the right side of the neck. The speaker had operated, removing the diseased glands and fascia. Three years later there had been a similar condition on the opposite side of the neck, for which another surgeon had operated. Since then he had had recurrences, and, in all, twenty-seven operations, including incisions and curettings. The site of each incision was now marked by large, elevated, irregular-shaped, characteristic keloids which extended beyond the actual cicatrices. The deformity in the neck was very marked.

Dr. John W. S. Gouley said that he would like to inquire from the histologists present as to the actual state of knowledge respecting these keloids.

Dr. W. R. Townsend suggested that the case of wrist-drop might be benefited by the limbs being superextended on a splint.

He had seen this treatment employed by Dr. Gibney with much success in a number of cases of wrist-drop from lead paralysis.

Dr. Gouley called attention to the fact that as long ago as 1854 to 1859 Dr. John P. Batchelder had published an elaborate paper on the treatment of these paralyses, especially of wrist-drop, by the use of a splint to insure extension.

Dr. John A. Wyeth said that he had seen several cases of paralysis of the musculo-spiral nerve after fracture in which the callus had been thrown around this nerve, causing it to atrophy. In one case, chiseling away the callus had restored the muscles to their full function after some time; in another case the nerve had been resected, but as it was a hospital case the subsequent history had not been obtained. He knew about still another case where the nerve had been united, and yet over twelve months had passed before there had been any evidence of restoration of function of the nerve, although ultimately it had been completely restored. In the case just presented he thought one could wait with advantage to see whether the functions would not be restored without operation.

Dr. Syms said that he had considered the advisability of operating in the first case, but as sensation had been partially restored when he had first seen the man he had felt that it was much better to wait. Again, the only guide to the site of the injury had been a scar over the olecranon. He had seen a number of cases of traumatic paralysis of the musculo-spiral nerve recover spontaneously, and cases of transient paralysis from pressure were not at all uncommon.

He had long hoped for further information on the subject of these keloid growths. All that seemed to be known was that they consisted of a mass of dense fibrous tissue. The ætiology was shrouded in obscurity. The speaker recalled one very marked case in which a keloid growth had indicated the former site of numerous acne pustules. He thought that many observers were inclined now to do away with the classification into idiopathic and traumatic keloid, the opinion being that all of these keloids probably resulted from traumatism.

Floating Kidney.—Dr. William E. Stŭddiford presented a woman, thirty-five years of age, who had given a history of syphilitic infection many years ago. She had been treated for this, and had been in fairly good health up to 1886, except for attacks of pain in the left side of the abdomen. Her weight at this time had been from a hundred and forty to a hundred and fifty pounds. In 1886 she had begun to lose flesh and strength, and had become quite nervous. This nervousness had increased up to two years ago when she had noticed that during the menstrual period the nervousness was still more aggravated, and that there was some difficulty in walking. This unsteadiness of gait had been constant for the last fifteen months. She had also complained of a dragging pain in the lower part of the abdomen on the left side, increased by stooping or lifting, and of frequent and painful micturition. These latter symptoms had become so much more severe a few months ago that she had applied at the Outdoor Department of Bellevue Hospital for treatment. At that time there had been a marked ataxic gait and a loss of patellar reflex; she had been unable to stand with the eyes closed and the feet together; there had been disturbance of vision, and pain in the back and left side. Examination had shown no disease of the uterus or its appendages, but in the left iliac fossa there had been a tender point and a movable tumor. The tumor could easily be placed in the position of the kidney, and this organ had been absent from its usual position. The tumor had therefore been diagnosticated as a movable kidney, and had been retained in place by an ordinary obstetric binder. While it was so retained many of the symptoms had been improved. The other symptoms had been supposed to be due to locomotor ataxia.

Dr. J. F. Erdmann said he had been rather chary about making the diagnosis of floating kidney, as he had recently seen in the dissecting room a case in which the kidney had been in the iliac fossa over the psoas magnus, with the origin of the renal artery from the bifurcation of the aorta. Another case also, in which the kidney had been in practically the same position, had been reported to him from the Almshouse Hospital autopsy room.

Carcinomata of the Breast.—Dr. Erdmann presented the following specimens: The first specimen was a medullary carcinoma which had been removed from Mrs. E. H., thirty-eight years of age, a nurse by occupation. In 1889 she had noticed a small growth on the right breast of about the size of a filbert. It had remained about this size until October, 1893. On the morning of January 1, 1894, she had found on awakening that the right breast was very black. There were no contusions or abrasions indicating an accidental blow during the night. When first seen by the speaker the growth had been of about the size of a hen's egg. A few days later he had excised the tumor, and on cutting into the breast itself had found the milk ducts throughout filled with clotted blood. None of the axillary glands had been involved. She had made an excellent recovery.

The second specimen was that of a carcinoma of about five months' growth, undergoing calcareous degeneration. The patient was a woman, thirty-five years of age, who had had a number of children in rapid succession. Five months and a half ago she had first noticed a small growth in the left breast. This had increased rapidly, but had been accompanied by but little pain. Subsequently, a secondary growth had been noticed. The breast had been excised along with the whole chain of axillary glands, which were diseased. One of them, of the size of a duck-shot, on being examined, had shown marked carcinomatous infiltration.

Epithelioma of the Rectum.—A third specimen had been removed by operation from a woman, forty-four years of age, who had given no history bearing upon the rectal trouble, except that five weeks previous to the speaker's having seen her she was said to have been operated upon for hæmorrhoids. He had first seen her on June 27th, and on the next day had removed three inches and a half of the bowel, including two thirds of its circumference. The operation which he had performed was that described by Kelsey as Allingham's operation, and had consisted in passing a knife into the anus posteriorly and cutting to the tip of the coccyx, then liberating the gut with a circular incision, and pulling down the bowel—practically a Kocher operation without the removal of the coccyx. There had been no cachexia, no enlargement in the groin, and no evidence of abdominal involvement. Seven weeks after this she had noticed some trouble with the rectum, and a week later had returned with a growth of half the size of the first one. Two inches and a half of the rectum and about two inches square of the posterior vaginal wall had been removed. There had been no return of the growth, and the patient had gained thirty or forty pounds in weight.

Dr. Parker Syms said he had had considerable experience with such cases of rectal disease, and he thought ordinarily the operation was not sufficiently complete. The higher posteriro operation, after Kraske's method, removing sufficient bone to gain free access to the rectum was the better operation in his opinion. In this operation, one was able to remove much lymphatic tissue which could not be otherwise reached. One of his patients of this class had died of pneumonia six years after the operation and without any evidence of a recurrence of the disease.

Dr. Wyeth asked about the control over the discharge of fæces.

Dr. Erdmann replied that the object had been to retain as much of the sphincter as possible in the first operation, but no effort had been made in this direction in the second operation. As a result of cicatricial contraction, and by rebuilding the perinæum as much as possible, the patient had very fair control of the fæces.

Dr. Wyeth said that in such cases he thought that greater control over the fæces could be secured by adopting Dr. Gerster's plan of twisting the bowel one turn upon itself.

Fibroma of the Uterus; Abdominal Hysterectomy.—The fourth specimen was that of a fibroid of the uterus, weighing three pounds eight ounces, which had been removed from an idiotic colored woman, thirty-eight years of age. The operation had been done on account of very profuse menstrual hæmorrhages. The uterus had been removed by what Dr. Edebohls called pan-hysterectomy. The patient had been discharged on the twentieth day.

Epithelioma of the Floor of the Mouth.—The next specimen had been taken from O. C., a man sixty-four years of age. One uncle had had a so-called "smoker's cancer" of the lip, otherwise the family history had been negative. On August 6, 1893, a physician had told him that he had cancer. He had been referred to Dr. Joseph D. Bryant and had then come under the speaker's observation. Dr. Biggs had examined a specimen of it and had reported it to be an epithelioma. The left half of the inferior maxilla, the mucous membrane on the side of the tongue, a considerable area of the cheek, and a portion of the pillars of the fauces and of the antero-lateral wall of the pharynx had been removed about eight months ago. There had been no evidence of recurrence since then.

(*To be concluded.*)

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

SURGICAL SECTION.

Meeting of March 9, 1894.

Dr. John B. Roberts in the Chair.

An Operation for an Old Dislocation of the Elbow and a Bridge of Callus between the Radius and the Ulna.—The Chairman showed a patient who had had an old dislocation of the elbow, which had occurred two years ago, and was the result of a fall from a carriage which was overturned. The injury was evidently a backward dislocation of both bones of the forearm, with compound fracture of the radius at the junction of the upper and middle thirds. When she had come under the speaker's care at the Woman's Hospital she had the right arm rigidly extended with no motion at the elbow; suffered with pain and numbness in the fingers at the ulnar side of the hand, due to pressure on the ulnar nerve, and had a suppurating sinus at a point of depression shown in the cast made of the arm before operation.

It had seemed to the speaker that it was proper to attempt to treat the old dislocation, although of two years' standing, by making a resection in order to get the arm in a flexed position. He cut down upon the olecranon, and found that the head of the radius and the olecranon was soldered by callus to the humerus in the abnormal position. The ulnar nerve was displaced and in a condition of tension. He was compelled to chisel the radius and ulna loose and cut off the triceps tendon in order to put the bones at the elbow in the position of flexion, which would be so much more useful and convenient, even if the elbow was immovable. In order to unite the triceps tendon to the ulna after flexing the joint, he was obliged to lengthen it by cutting a V-shaped flap out of the tendon. This he made with its apex upward, and then turned the flap over with its point downward, and sutured it to the stump which had been left attached to the olecranon. He used silk sutures. He lessened the tension on the ulnar nerve by replacing it; in the course of a few days the numbness of the fingers disappeared.

In order to cover in the gape in the skin, he did an extensive plastic operation by dissecting a flap from the forearm. Her arm was then flexed at a right angle, and in the course of perhaps two months there was a considerable degree of motion. The radius and ulna were still united at the seat of the sinus by a bridge of callus, which prevented pronation and supination. He therefore determined to cut down and chisel out the bridge of bone and see if he could establish pronation and supination. Upon cutting down he found a sequestrum due to necrosis of the radius at the point of fracture. He chiseled away a considerable amount of bone and took out the dead portion of the radius. Knowing that the head of the radius would not be likely to rotate, as it had no cartilage upon it, he determined to make an artificial joint in order to get some pronation and supination in addition to the amount of flexion already obtained at the elbow. He excised three quarters of an inch of the radius, and then encouraged the girl, after he had removed the portion of bone and the wound had partly healed, to make motions of rotation of the hand.

She obtained a certain amount of *passive* supination and pronation, and the fingers became more flexible. During endeavors at making passive extension and flexion of the elbow, fracture of the ulna took place, some weeks later, in the upper third of the shaft. This necessitated putting her arm in a splint and prevented further massage and other motions to get motion at the elbow and wrist. As the elbow would probably become stiff, he, in order to get the hand more toward the face, allowed the fragments to unite with a little angularity. There was now a bend or angular deformity to be seen at the seat of fracture, which enabled her to bring the hand nearer the mouth than otherwise would have been possible. The wound had not entirely healed. She had lost nearly all the flexion and extension she had had from the first operation during immobilization of the joint for repair of the fracture of the ulna. She had a little motion at the elbow, not enough to be useful; there was practically no supination or pronation of the hand, but the numbness of the fingers was gone, and she could bend her fingers, which had been stiff, pretty well. She had, and had had, good motion at the wrist. Not much had been gained, therefore, except the right-angle position of the elbow, motion of the fingers, and freedom from pain and numbness. If fracture had not taken place he thought he would have obtained considerable motion at the elbow and have been able to maintain the false joint at the point of radial resection so as to give her some rotation of the hand.

The case was interesting because of the lengthening of the tendon of the triceps, the attempt to establish a point of motion in the shaft of the radius, when the head was adherent by ankylosis to the humerus, and the ease with which bridges of callus uniting the radius and ulna could be removed.

Delayed Union in Fracture.—Dr. T. G. Morton said that in these days of antiseptic surgery we were perhaps a little too hasty in regard to the treatment of delayed union in fractures, and did not give Nature time to effect repair. The length of time taken for repair was unusually long, yet the result in two cases reported as follows had been perfect:

Case I. *Delayed Union in a Fracture of the Femur.*—This case had occurred in the practice of Dr. W. H. Shipps, of Bordentown, N. J. On January 20, 1893, L. M., a young woman, seventeen years of age, while coasting was violently thrown from a sled, sustaining a fracture of the right femur at about the junction of its middle and lower third. She was at once carried to her home, placed upon a firm mattress and sand bags, and extension by weight and pulley employed. The patient, an intelligent girl, recognized from the start the importance of keeping the fragments in position, and labored in every possible way to avoid disturbance of the limb; so determined was she in this respect that she avoided, in so far as possible, a regular evacuation of the bowels, although assured of the folly of such a course. As she had a most capricious appetite, it was difficult for the first six weeks to get her to take a sufficient quantity of nourishment, although the necessity for this important aid in bone repair was constantly urged upon her. At the end of four weeks the dressings were removed and the limb was carefully inspected. No shortening was detected, but no attempt at union had taken place, notwithstanding the parts were in perfect apposition. The dressings were carefully reapplied. On March 20th, two months after the injury, an examination showed entire absence of bony union. At this juncture Dr. Shipps had requested the speaker to see the case with him. It was agreed to resort to daily massage of the entire limb, especially in the vicinity of the fracture, and to lessen the amount of extension. The limb was also incased in a firm dressing made of two Russia felt splints; a posterior one, extending from the great trochanter to within six inches of the ankle, and an anterior, extending the entire length of the thigh, firmly held in place by a roller bandage. Four weeks later the patient was allowed to get out of bed daily and walk about on crutches, care being taken that no weight was borne upon the limb. This plan of treatment was faithfully carried out, and the patient's appetite in the meantime materially improved. In the course of three weeks the circumference of the limb had visibly increased and an evident attempt at bony union was noticed. From this on the limb gradually improved in size and strength, until, at the end of eight weeks from the commencement of massage, at which time the speaker had again seen the case, consolidation was complete. The dressings were continued for a few weeks longer, when a single roller bandage took the place of splints. Careful measurement of the two limbs at this time failed to show any appreciable shortening. Altogether the patient had made a most satisfactory recovery.

Case II. *Delayed Union in Fracture of the Leg.*—On August 1, 1893, Captain A. S., aged fifty-one years, while at Ivigtut, South Greenland, in command of his vessel, received an injury to the right leg by the fall of a bulkhead or partition which separated the cargo of kryolite from the ballast. A medical man from the shore who was summoned, found the left leg seriously crushed and an oblique fracture of both bones about the junction of the middle and lower thirds. He applied temporary pasteboard splints, and the patient was hoisted from the hold. Four days later, bandages, pasteboard splints, and a plaster dressing were applied. Three weeks later the swelling of the limb had so subsided that he observed not only a considerable movement, but a grating of the bone. Six weeks subsequent to the injury the dressing was removed, when it was found that there was little if any union. A posterior board splint was applied, and two weeks later he left Greenland and arrived in Philadelphia on October 17th, seventy-eight days after the accident; he then entered the Pennsylvania Hospital. His general condition was good. The limb was greatly swollen, and the skin dry and rough; evidently no attention had been given to the condition of the circulation, for the limb had not been out of splints for many weeks, and had not been bathed since the accident. There was little if any effort at repair in the fracture. Attention was first directed to improving the circulation of the limb by soaking in warm water and massage. A fracture box, subsequently Russia felt splints, and finally a brace were applied. He was discharged on December 11, 1893, with considerable union, which was not firm until the close of January, when he was able to walk without any support.

Dr. G. G. Davis thought this was a good example of how plaster dressings did not keep a limb quiet. Inasmuch as they were used for that specific purpose, he thought it worth while to call attention to the fact that, at least in the way they were often applied, with a layer of cotton beneath, they were apt to permit motion at the seat of fracture. Of course, this man had had some dressing beneath the plaster bandage, which had probably been the cause of its getting loose. He would like to ask Dr. Morton whether in cases of delayed union he kept the parts absolutely quiet, or whether he considered it best to allow some motion. From the cases reported it was evident that they could be cured both by permitting motion and by keeping them at rest.

Dr. Morton would keep them absolutely quiet until the probability of repair through quiet seemed doubtful; then he would put the limb into a movable apparatus.

Rubber-Tissue Gloves for Protecting the Hands during Operations, etc.—Dr. Morton called attention to thin rubber gloves for general surgical purposes and for handling strong solutions. He had found these rubber-tissue gloves extremely useful in handling offensive cases. With them it became a pleasure to make rectal examinations, because the skin of the hands did not become saturated with fœtor, and it was wonderful how many more examinations one made. Also in handling strong solutions, or even in operating in septic cases, they had an excellent field. The rubber was so very thin that it interfered very little with the tactile sense. As a rule, they went on with great ease and came off readily. He thought them of great value when handling morbid growths or making post-mortems where it was possible to be inoculated. They bore steam sterilization and soaking in strong solutions of carbolic acid or bichloride of mercury.

Book Notices.

Pyogenic Infective Diseases of the Brain and Spinal Cord. Meningitis. Abscess of Brain. Infective Sinus Thrombosis. By William Macewen, M. D., Glasgow. New York: Macmillan & Co., 1893. Pp. xxiv–354. [Price, $6.]

While it is true, as the author states, that pyogenic infective diseases of the cerebro-spinal system have only during recent years been appreciated fully, and it is also true that our knowledge regarding them is still imperfect, it will require but a few more such works as this to give us certain and accurate data that will substitute knowledge for ignorance. As it is a fact that a large number of the cases of pyogenic affections of the brain arise from neglected otitis media, it is also a fact that they should be regarded as preventable diseases.

In this volume a chapter is devoted to the consideration of the surgical anatomy of the temporal bone and of the frontal sinuses, and to the venous supply of the head.

The second chapter treats of the pathology of cerebral abscess and meningitis, because the one so frequently accompanies the other. The author believes that in the great majority of cases, if not in all, the inflammation is due to micro-organisms. These find an excellent incubating chamber in the middle ear, which they usually enter through the Eustachian tube. While acute processes seldom spread into the interior of the skull, because the mucous membrane of the middle ear is still intact and the underlying bone is unaffected, yet in chronic cases the bone is frequently necrosed and the mucous membrane destroyed. When this osseous erosion exposes the dura mater this membrane throws out a mass of granulation tissue from its external surface that obstructs the further inroads of the pathogenic process and assists in the absorption of the disintegrating bone. Dr. Macewen therefore urges that great caution should be exercised in removing masses of granulation tissue from the middle ear, because it may result in meningitis or cerebral abscess.

The third chapter treats of the symptoms of abscess of the brain, the course of which is divided into three stages: The initiatory stage, varying from twelve hours to a week, in which there are pain, vomiting, rigors, temperature, and a cessation of pus from the middle ear; the second stage, in which there are slow cerebration, a tendency to doze, slow pulse and respiration, anorexia, vomiting, paralysis, rigors, and optic neuritis; and the third or terminal stage, in which there are stupor or coma, symptoms of acute leptomeningitis, or bursting, encapsulation, or absorption of the abscess. The author states that he has found it possible to elicit a distinctive cranial percussion note as an aid to diagnosis in certain gross changes of the intracranial contents. This is caused by the note being modified by the consistence and volume of the contents and their relative position to the bone. A thin cranium vibrates more easily than a thick one. The sign is most useful in determining ventricular distention.

The fourth chapter is devoted to thrombosis of the intracranial sinuses. Two forms are recognized: the primary, or marasmic, and the secondary, or infective. The former chiefly affects the azygous sinuses, its clot tends to organize or be absorbed, there is a tendency to produce brain softening, purulent infection is seldom a sequence, and there is no accompanying leptomeningitis or cerebral or cerebellar abscess; while the infective thrombosis chiefly affects the dual sinuses, its clots tend to purulent disintegration, it does not tend to brain softening, septic or infective emboli are common, and it is often coincident with purulent leptomeningitis or with cerebral or cerebellar abscess. The section on sigmoid-sinus thrombosis is a most valuable contribution to our literature.

In abscess of the brain, infective thrombosis of the intracranial sinuses, and leptomeningitis the first step in prophylaxis is to prevent the occurrence of primary infective foci, and the second is to eradicate them when present. Chronic otorrhœa, the author thinks, is too lightly regarded, and is considered as a mere inconvenience instead of a menace to life. All persistent purulent discharges from the middle ear ought to be regarded seriously, and the physician should not rest satisfied until the discharge is cured. The safest instrument for the purpose of exposing the antrum is the rotatory bur propelled by the surgical engine; the use of the chisel and mallet is, as we believe, properly and justly condemned.

The author has in fifty-four cases of mastoid infective disease, extending from the middle ear and unaccompanied by intracranial lesions, ablated the antrum and mastoid cells, and cleansed the middle ear, removing therefrom cholesteatomatous accumulations, masses of granulation tissue, and the ossicles when diseased. He has never purposely opened or accidentally wounded the sigmoid sinus. The operation has enabled each of these patients to have a mass of connective tissue placed between the intracranial contents and the tympanum, forming an efficient barrier against pyogenic invasion of the middle and posterior fossæ of the skull at their most vulnerable points.

Forty-three of these patients were cured and eleven were improved. His statistics further show that seventeen cases of pyogenic pachymeningitis externa were all cured; five cases of extradural abscess were cured; six cases of pyogenic cerebral leptomeningitis were cured; of five cases of pyogenic cerebrospinal leptomeningitis, only one was cured; of twenty-five persons with abscess of the brain, nineteen were operated on and eighteen recovered. In a total of ninety-four cases of infective intracranial lesions, seventy-four patients were subjected to operation; sixty-three of them were cured, and the total mortality was thirty-one.

The careful, precise methods followed by the author, his thorough familiarity with cerebral anatomy and surgery, and his habit of waiting for time to demonstrate the value of what he has done, make this volume the most valuable contribution to the surgery of the brain that has appeared in several years. The illustrations are magnificent, on a par with those in his beautiful Atlas of Head Sections. This volume must be of great interest to the neurologist, the aurist, and the surgeon.

Lectures on Auto-intoxication in Disease, or Self-poisoning of the Individual. By CH. BOUCHARD, Professor of Pathology and Therapeutics, etc., Paris. Translated, with a Preface, by THOMAS OLIVER, M. A., M. D., F. R. C. P., Professor of Physiology, University of Durham, etc. Philadelphia: F. A. Davis & Co., 1894. Pp. xvi–302. [Price, $1.75.]

THE increasing interest manifested by the profession regarding the important subject of self-intoxication makes the appearance of this translation of Bouchard's work an appropriate and timely addition to medical literature.

The development of physiological and pathological alkaloids in consequence of putrefactive changes in the intestinal canal plays an important part in many disease processes, and such is the influence of these alkaloids in causing a transition from an apparently normal to an evidently abnormal condition that it is more and more necessary that the physician should take them into account in the routine of his daily work. The investigations of Selmi, Brieger, Pasteur, Fränkel, Hankin, Martin, and many others have succeeded in isolating these alkaloids from the serum, the urine, and the fæces, and have shown that disease may, and often does, depend upon the presence in the system of substances capable of combining with acids to form salts or bases, which substances Selmi called ptomaines. The latter, produced by the action of bacteria upon organic matter, are to be distinguished from those basic substances that result from intra-organic tissue metabolism, and are known as leucomaines. As all ptomaines are not poisonous, Brieger suggested that the term ptomaine should be restricted to non-poisonous basic products, those that are poisonous being called toxines.

In this volume the author endeavors to show that man is, by the very nature of his own metabolism, continually on the threshold of disease. Bichat said: "Life is the aggregate of the functions that resist death," and Bouchard says virtually that health is the aggregate of the functions that resist self-intoxication. The latter is only prevented by the activity of the excretory organs, chiefly the kidney.

The subject matter is arranged in thirty-two lectures, the preliminary discourses being devoted to the general features of the subject and the final lectures considering special morbid conditions. The nature of the pathogenic processes in general, and the production and elimination of poisons by the organism, precede the consideration of the methods of the experimental study of the toxicity of the products of emunction. Seven lectures are devoted to the origin and character of the toxic substances in the urine, and five to the pathogenesis of uræmia. Three chapters are devoted to ordinary gastro-intestinal self-intoxications, four chapters to the self-intoxication of typhoid fever, two chapters to hepatic self-intoxication, and three chapters to the self-intoxication of cholera.

The translator has succeeded admirably in preserving the author's agreeable and interesting style, and the volume deserves a wide popularity.

A Manual of Nursing in Pelvic Surgery. By LEWIS S. McMURTRY, A. M., M. D., Professor of Gynæcology in the Hospital College of Medicine, Louisville, Ky. Louisville: John P. Morton & Company, 1894. Pp. 6–7 to 92.

THE author states that this little book is an elaboration of the "working notes" he prepared for the use of the nurses at the Jennie Casseday Infirmary for Women. It is a complete and practical guide for nurses engaged in the care of women with surgical diseases peculiar to their sex, and it is written in a clear manner that makes its teachings easily understood.

A Text-book on Diseases of the Eye. By HENRY D. NOYES, A. M., M. D., Professor of Ophthalmology and Otology in Bellevue Hospital Medical College, etc. Second and Revised Edition. Illustrated by Five Chromo-lithographic Plates, Ten Plates in Black and Colors, and Two Hundred and Sixty-nine Wood Engravings. New York: William Wood & Co., 1894. Pp. xvii–816.

THIS work needs no fresh introduction to the profession, who well know its admirable character. The same arrangement prevails as in the first edition, but a number of additions have been made. Considerable space has been devoted to cerebral anatomy and physiology, and a number of chapters have been rewritten so as to set forth the most recent well-established views in ophthalmology. Many changes have been made in the illustrations and new ones have been added. The work is a worthy memorial of its author's untiring industry.

The International Medical Annual and Practitioner's Index: A Work of Reference for Medical Practitioners. By various contributors, 1894. Twelfth Year. New York: E. B. Treat & Co. Pp. 704. [Price, $2.75.]

IF we say that the *International Medical Annual* for 1894 ably maintains the standard of excellence set by its predecessors of the past eleven years, we do it but justice and at the same time pay it a compliment than which there can scarcely be a better. And yet the constant endeavor of its editors to improve upon it each year results in giving us an annual a little more valuable and a little more complete.

This year we may note as a distinct improvement the many illustrations (some of them, it is true, very bad, but most of them excellent) and, especially of interest, those accompanying the chapter on insanity.

Of yet more value, however, is the care shown in presenting the reports of more than one authority upon many of the more important subjects, a care which is rewarded by a singular freedom of the volume from unrestricted opinion and prejudice. To this absence of narrowness we called attention in reviewing the volume in 1893, and we are pleased to note the growth of that impartiality and liberality in the volume for 1894.

The Human Element in Sex. Being a Medical Inquiry into the Relation of Sexual Physiology to Christian Morality. By Dr. ELIZABETH BLACKWELL. New Edition. London: J. & A. Churchill, 1894.

THE authoress's purpose in the present work is to aid in the instruction of parents and guardians of the young, from the standpoint of what she designates as the Christian physiologist, in the various features of the sexual functions. This edition of a work published ten years ago contains but little essentially new. It seems to us somewhat too elaborate to accomplish its intended purpose with the average reader, but its plan and purpose can not but meet with the approval of every thoughtful physician.

BOOKS, ETC., RECEIVED.

Essentials of Anatomy, including the Anatomy of the Viscera, arranged in the form of Questions and Answers prepared especially for Students of Medicine. By Charles B. Nancrede, M. D., Professor of Surgery and Clinical Surgery in the University of Michigan, Ann Arbor, etc. Fifth Edition. With an Appendix on the Osteology of the Human Body; the whole based on the Last Edition of Gray's Anatomy. One Hundred and Eighty Fine Illustrations. Philadelphia: W. B. Saunders, 1894. Pp. x–17 to 388. [Price, $1.] [*Saunders's Question Compends.*]

Weekly Abstract of Sanitary Reports issued by the Supervising Surgeon General of the Marine-Hospital Service. Vol. VIII. (Nos. 1 to 52.)

Transactions of the New York State Medical Association for the Year 1893. Vol. X.

A Retrospect of Surgery. January, 1890, to January, 1894. By Francis J. Shepherd, M. D. [Reprinted from the *Montreal Medical Journal.*]

The Aseptic Dressing of the Umbilical Stump. By Joseph Eve Allen, M. D., Augusta, Ga. [Reprinted from the *American Journal of Obstetrics.*]

Three Illustrative Cases of Abdominal Section. By Augustus Schachner, M. D., Louisville, Ky. [Reprinted from the *American Journal of Obstetrics.*]

Further Remarks on the Occurrence of a Form of Non-albuminous Nephritis other than Typical Fibroid Kidney. By D. D. Stewart, M. D., Philadelphia. [Reprinted from the *Medical News.*]

Traitement chirurgical de la phtisie laryngée. Par le Dr. Gouguenheim. [Extrait des *Annales des maladies de l'oreille et du larynx.*]

Grundriss der Kinderheilkunde mit besonderer Berücksichtigung der Diätetik. Von Dr. Otto Hauser, Assistent der Universitäts-Kinder-Poliklinik in der kgl. Charité zu Berlin. H. Kornfeld, 1894. Pp. xii–318. [Preis, Mark 7.]

Thirty-third Annual Report of the Cincinnati Hospital to the Mayor of Cincinnati for the Fiscal Year ending December 31, 1893.

Food Products. 1. Twelve Edible Mushrooms of the United States, with Directions for their Identification and their Preparation as Food. By Thomas Taylor, M. D. United States Department of Agriculture. Division of Microscopy.

The New Orleans Sewerage System. Inaugurated Wednesday, April 18, 1894. [Reprinted from the *New Orleans Times-Democrat.*]

Essentials of Nervous Diseases and Insanity: their Symptoms and Treatment. A Manual for Students and Practitioners. By John C. Shaw, M. D., Clinical Professor of Diseases of the Mind and Nervous System, Long Island College Hospital Medical School, etc. Second Edition, revised. Forty-eight Original Illustrations, mostly selected from the Author's Private Practice. Philadelphia: W. B. Saunders, 1894. Pp. x–17 to 194. [*Saunders's Question Compends*, No. 21.] [Price, $1.]

Practical Lectures in Dermatology. Comprising a Course of Fifteen Lectures delivered at the University of Vermont Medical Department during the Session of 1892 and 1893. By Condict W. Cutler, M. S., M. D., Professor of Dermatology, University of Vermont, Physician in Chief and Dermatologist to the New York Dispensary, etc. New York and London: G. P. Putnam's Sons, 1894. Pp. viii–233. [Price, $2.]

Miscellany.

The Cutaneous Absorption of Guaiacol.—The *Union médicale* for April 1st contains an account of a communication to the *Société des sciences médicales*, by M. G. Linossier and M. M. Lannois, on the lowering of the temperature produced by painting and injecting with guaiacol. With subcutaneous injections of relatively feeble quantities of guaiacol, a lowering of the temperature had been obtained comparable to that produced by painting with it. The authors had used a mixture of equal parts of oil of sweet almonds and guaiacol. After injecting the contents of an ordinary syringe containing a cubic centimetre, the temperature had fallen two degrees. In one of their patients the temperature had been lowered from 102·1° to 95·5° F.; there had been chills and signs of collapse. In these conditions, the thermic lowering was proportional to the quantity of guaiacol introduced under the skin. In the same patient a syringeful of the mixture had lowered the temperature from 101·5° to 97·7°, and half a syringeful from 101·6° to 99·3°. In another patient, a syringeful had lowered the temperature from 102·5° to 100°, and half the quantity from 103·1° to 101·8°. This was a strong argument in favor of the cutaneous absorption of guaiacol; but the demonstration was not complete; it had only been proved that the absorbed guaiacol acted in the same way as that applied on the skin. The authors, struck with the intensity of the cutaneous absorption in their first experiments, thought it would be of interest to point out the mechanism and the conditions. They related the following cases: A napkin, impregnated with guaiacol, was held from ten in the morning until four in the afternoon before the mouth of a young patient convalescent from typhoid fever, who showed very marked thermic elevations in connection with subcutaneous abscesses. At the end of that time, the urine contained only 0·1 in 1,000 of guaiacol. Several days afterward the right thigh was painted with thirty grains of guaiacol, many precautions being taken to prevent pulmonary absorption, and the painted part immediately covered with an impermeable fabric. During this time the patient breathed behind a screen. Six hours after the painting, the urine showed 0·9 in 1,000 of guaicol, and the temperature had fallen two degrees. In this case the pulmonary absorption had been exaggerated, and 0·1 in 1,000 of guaiacol had been found in the urine, whereas, after the painting, the proportion had been nine times as great, and, in the meantime, the absorption by the respiratory ducts had been reduced to a minimum, if not to zero. The slight importance of pulmonary absorption is shown in the fact that inhalations of guaiacol do not lower the temperature of tuberculous-fever patients. In the second case the chest of the patient was painted with thirty grains of guaiacol and then carefully covered for five hours. During the whole time the patient breathed outside of the room by means of a rubber tube, and four hours afterward the urine showed 2·8 in 1,000 of guaiacol, and nine hours afterward, 3·3 in 1,000.

The cutaneous absorption of guaiacol thus proved beyond a doubt, there remained only the mechanism to establish. The guaiacol may have been absorbed in a liquid state by the unbroken skin, or it may have exercised an alterative action on the epidermis in such a way as to render it permeable. Finally, it may be supposed that the guaiacol, which is volatile, was absorbed in a state of vapor. The progress of this absorption was regular; often after fifteen minutes the urine showed traces of guaiacol, and after half an hour several milligrammes were invariably found. During an hour and a half the proportion was increased little by little, and attained its maximum in between an hour and a half and four hours. In from five to seven hours there was a considerable decrease. By this time half the guaiacol had already passed into the urine, and the other part was eliminated with the rest of the urine in the twenty-four hours. On the following day the urine often did not contain more than a trace of guaiacol. The total quantity eliminated was always a considerable fraction of the guaiacol deposited on the skin. Among the conditions which went to vary the total quantity eliminated, the most important was the dose. The extent of surface painted had also its importance. In the same patient thirty grains were painted first on a surface of a hundred and eighty square centimetres, and afterward on three hundred square centimetres. In the first case, after three hours, the urine contained nine grains of guaiacol, and in the second, after two hours, thirty-three grains in 1,000.

Absorption seemed to be more rapid on the thorax than on the limbs; in this respect, certain conditions also must be taken into account, such as age, sex, nature of the skin, etc. After repeated experiments the authors have come to the following conclusions: 1. Guaiacol applied by painting is absorbed by the skin, and this absorption is produced, at least in a great measure, by its vaporous state. 2. The absorption is very rapid; fifteen minutes after painting, the medicament may be detected in the urine. During an hour and a half the proportion increases little by little, and attains its maximum in from an hour and a half to four hours. The elimination is nearly complete in twenty-four hours. 3. After twenty-four hours the total quantity of 55·5 per cent. of guaiacol may be found, after the skin has been painted with from thirty to sixty grains of guaiacol. The absolute quantity found in the urine has been as much as thirty-two grains after an application of sixty grains, and fifty grains after an application of a hundred and fifty grains. 4. Cutaneous absorption is such then that it permits of saturating the organism without recourse to the digestive or subcutaneous routes.

A New Sign of Lead Poisoning.—In the *Presse médicale* for April 21st there is a summary of an article by M. E. Destrée, published in the *Journal de médecine de Bruxelles*. In eighteen out of twenty persons affected with lead poisoning the author has observed a narrow zone of hyperæsthesia at the level of the articulation of the manubrium with the ensiform cartilage. As a general rule, pressure on the sternum is really painful only under one of two conditions—namely, when the bone is diseased, as is the case in leucocythæmia with lesions of the bone marrow, or when the thoracic wall and the skin are hyperæsthetic, as happens in hysteria, sometimes in neurasthenia, and often in chronic alcoholism. But in these latter cases the hyperæsthesia is not found to be so limited in extent as it is in lead poisoning. Saturnine hyperæsthesia is indeed a symptom of nervous origin, comparable to the intercostal neuralgias observed by Rosenthal. There is nothing astonishing, says the author, in the fact that the sternal hyperæsthesia is so precisely marked when we remember that Beau has shown that there is never any anæsthesia at the level of the scrobiculus cordis in lead poisoning, and that in lead colic there is very decided hyperæsthesia of the abdominal wall.

Reflex Contraction of the Adductors of the Thigh on Percussion of the Opposite Patellar Tendon.—At a recent meeting of the *Société médicale des hôpitaux*, a report of which is published in the *Union médicale* for April 17th, M. Marie related the case of a young man who had been attacked with myelosyringosis in a pseudo-acromegalic form, and showed how the patellar reflex acted. This reflex was exaggerated on the right and abolished on the left. This curious difference was seen not only in myelosyringosis, but also in tabes and in general paralysis. If the left patellar tendon was struck, no movement of extension was produced, but a very distinct movement of adduction of the thigh by contraction of the adductors was observed. So, if the patellar reflex was absent in the patient, it was not in consequence of an alteration of the centripetal routes, but of one of the motor center, although, while the patient was walking, the left leg worked well and no atrophy of the femoral triceps was noticed. There are certain authors, says M. Marie, notably in England, who maintain that the phenomena referred to (tendinous reflexes) are not reflexes; that the muscular contraction which constitutes them is determined by a direct excitation, not reflex, of the muscular fibers, under the influence of the shock which is communicated to these fibers by the percussion of the tendons. In the case related by M. Marie the reflex nature of the contraction of the adductors of the right thigh could not be denied. This contralateral contraction of the adductors of the thigh is seen, moreover, in a large number of healthy subjects in whom the patellar reflexes are normal. This phenomenon may have a great clinical importance, as it permits of distinguishing in certain cases if the absence of the patellar reflex is due or not to an alteration of the centripetal paths, and if it has to do with a medullary affection or an alteration of the peripheral nerves.

This symptom is all the more important as the objective signs warranting the making of a diagnosis are almost wholly wanting.

The Proper Direction of the Great Toe.—At a recent meeting of the Paris *Société de biologie*, a report of which appears in the *Progrès médical* for April 21st, M. Félix Regnault presented an abstract of an essay of his which is to appear complete in the proceedings of the *Société d'anthropologie.* The direction of the great toe, according to M. Regnault, varies according to the way in which the foot is managed. Persons who habitually hold objects between the first and second toes have the great toe pointing inward in relation to the axis of the body. Narrow shoes, on the contrary, push the great toe outward. In persons who go barefooted and use their feet only for walking anthropologists and physicians are agreed, up to the present time, that the great toe and the inner border of the foot form a straight line. Meyer was the first to maintain this proposition, and he recommended a form of shoe, the so-called "rational" shoe, square at the toe and with the inner border forming a straight line. Quite recently Meyer's position has been sustained by Pestal, Stourke, Ziegler, Manouvrier, and Blum. It is true that Brundt and von Lindau detected an error in Meyer's observations, and pointed out that the axis of the foot passed through the second toe and not through the first, as Meyer maintained, but the question of the axis of the great toe remains settled. From numerous examinations it has been ascertained that in persons who have never worn shoes the great toe is in a state of slight adduction (the abduction of the French). Of thirty-six natives of Dahomey, who use the foot as a prehensile organ, sixteen had the great toe pointing inward, six had it pointing straight forward, and fourteen had it directed outward. A few little barefooted children observed at Kehl showed slight adduction. Finally, numerous photographs preserved by the *Société de géographie* show how frequent this adduction is among peoples that use their feet as prehensile organs and go barefooted. Meyer's error came from his having made his examinations on the newborn, in whom the great toe is really parallel with the axis of the foot, but in whom, as soon as they begin to walk, it is directed a little outward. It results from this that the rectilinear inner border of the so-called "rational" shoe is in reality defective. All races have employed shoes with the inner border a little convex; this is to be seen in the foot-gear of the Chinese and of the ancient Greeks, Romans, Gauls, and others. The important thing is not to exaggerate this curve in accordance with the demands of fashion.

The Ophthalmoscope in Meningitis. — As the deeper structures of the eye have a direct communication with the arachnoid space of the brain and spinal cord, through the intervaginal space, it is evident that a systematic examination of the fundus of the eye with the ophthalmoscope will often reveal the condition of the meninges and indicate the extent to which the nerves are involved. In clinically studying forty cases of cerebro-spinal meningitis, with special reference to the derangements of the eyes, Dr. R. L. Randolph (*Johns Hopkins Hospital Bulletin*) has examined thirty-five patients with the ophthalmoscope, and found the fundus of the eye normal in only seven cases, the optic disc usually being congested, with the retinal veins distended and remarkably tortuous. In only three of the seven cases was the entire eye in a normal condition, and in these three the patients recovered. Of the four fatal cases with normal fundus, in one the patient had divergent strabismus and dilated pupils, another patient had marked nystagmus, another had greatly dilated pupils, and one was examined early in the disease. Many epidemics of cerebro-spinal meningitis have been noticed to have one or more eye symptoms in common, the most frequent being conjunctivitis and changes in the pupils. A special type of eye affection, however, is apt to be peculiar to every extensive epidemic. A systematic examination of the eyes with the ophthalmoscope will be useful in all suspected cases. The mere existence of good vision does not mean a sound optic nerve or retina, for a choked disc is often found where the visual disturbances are very slight; and frequently, when other eye symptoms are absent and the general symptoms are misleading, changes in the fundus of the eye may be found which indicate the purely cerebral disturbance. In cerebro-spinal meningitis the existence of eye symptoms, especially where the fundus is involved, indicates a grave prognosis.

Acarophobia.—In the *Revue générale de clinique et de thérapeutique* for April 21st there is an article on this subject by M. Georges Thibierge, of which the following is the substance: Persons who are pursued by a fear of the itch constitute a class of patients very difficult to deal with, for the most peremptory medical reason often fails to convince them of the groundlessness of their fear. The acarophobic types are numerous and belong to the class of neuropathics. In these patients signs of manifest nervousness are observed. They are irritable, unstable in character, crying and laughing easily, subject to migraine or to neuralgia, and exaggerate all their sufferings; having had the disease once, they believe that it persists or will return. They are the ones most to be dreaded by the physician, as, knowing from experience the symptoms of the disease, they are more apt to deceive him in describing to him a symptomatology more or less allied to that of the itch. Often the cutaneous irritation produced by the parasite and by the external applications necessary to combat the disease remains long after the cure has been effected; a pruritus, sometimes intense and persistent, causes the patient to think that the disease has returned, and he goes at once to a physician and tells him that he has the itch. A rapid examination is very often sufficient to undeceive the doctor, who perceives symptoms of a dermatosis very different from those of the itch, notwithstanding the patient's protestations. To convince him of this is far from easy, and his obstinacy is all the harder to overcome if he is attacked with one of those generalized pruriginous affections, characterized by excoriated papules spread over various regions of the body, in which the neuropathic tendencies of the patient do not account for the intensity and the tenacity of the pruritus. It is necessary then to make a very thorough examination to ascertain if it is the itch or not, and as soon as the physician is perfectly sure of his diagnosis he must convince the patient of the fact. If there is the least reticence on his part, the patient loses confidence. Sometimes, at the end of his resources, the physician advises a new treatment, which, says M. Thibierge, should not be too severe, although of sufficient importance in the patient's eyes to impress him with its value. Applications over the whole body of an ointment of a ten-per-cent. solution of naphthol or of an ointment containing from ten to fifteen per cent. of sulphur and one per cent. of menthol should be recommended; also the applications should be preceded by a bath in which plenty of soap is to be used. It is well, moreover, to recommend keeping the ointment on for several hours, and then taking another bath in which starch has been dissolved in order to subdue the irritation produced by the ointment. Before this therapeutic measure has time to fail, the patient generally allows himself to be convinced, and consents to submit to the proper treatment for the dermatosis with which he is really attacked. Hydrotherapy, says the author, is of great advantage in this treatment, because of its favorable influence not only in a certain number of pruriginous affections, but also in the neuropathic condition of the patient.

Another class of acarophobics are those who have never had the itch, but who are in constant fear of it. Any cutaneous affection more or less pruriginous will cause them to scratch frantically, and convince them that they are attacked with the disease. These patients are nearly always neuropathics who are strengthened in their belief, partly from having come in contact with persons really suffering from the itch, and partly from the pruriginous appearance of the papules produced by their energetic scratching. The foregoing treatment, says M. Thibierge, applies also to this class of acarophobics.

There is, however, another cause for acarophobia as yet but little known; it is cocainomania. In this intoxication a particular form of delirium is observed; an hallucinatory delirium which is especially observed in cutaneous troubles. The patient experiences peculiar sensations and proceeds to pierce his skin with the point of a needle in order to extract the foreign body which he believes to be some sort of an animalcule. Some patients will affirm that their skin is filled with acari. In these cases the similarity of the hallucination should put the physician on his guard against making an error in his diagnosis. The nervous manifestations of cocainism should prove to him that it is a case of true psychopathy. At all events, says M. Thibierge, this peculiar form of pruritus constitutes such a special type in the group of affections which may simulate the itch that it is worthy of mention.

Overcrowding of the Profession in California.—We are indebted to the editor of the *Occidental Medical Times*, of Sacramento, for advance proofs of its report of the recent annual meeting of the Medical Society of the State of California. From the president's address, by Dr. C. G. Kenyon, of San Francisco, we extract the following:

"As before stated, in this State we have about 2,700 practitioners of medicine and surgery, graduates of regular medicine and licentiates of its board of examiners, without counting several hundred licentiates of homœopathy and eclecticism. This vast number has as a field of labor a State with a population of 1,500,000, which by a simple process of division shows one doctor to every five hundred of population. To say that our profession is overcrowded expresses a fact too patent to admit of discussion.

"As an equal distribution leaves only this small ratio for a *clientèle*, what must be the portion left to some of the profession, when we find leading physicians who enjoy the patronage of thousands? The obvious tendency of this overcrowding, it is to be feared, is to lower the standard of professional conduct among regularly educated and licensed practitioners.

"We have also to consider, in addition to this unpleasant picture of a small army of medical men striving for existence in a limited field, a host of quacks of various kinds and degrees, who, like the camp-followers that hung about Sherman's army on his famous "march to the sea," are ever on the alert to pick up choice bits of forage and sustenance that should fall to the lot of the regular soldier, whose mess must suffer to the extent of the irregular depredations. Here we have a somewhat homely but, I think, pertinent illustration of the situation.

"But it is easier to depict this unfortunate condition of affairs than to recommend measures of adequate relief. The following suggestions, however, seem to me to be appropriate: We should no longer hold out to intending students of medicine alluring pictures of the excellence of this State as a field for practice. Until the time comes, if ever, when there shall be a more reasonable proportion between practitioners and patients, it is bound to be a question of the survival of the fittest, and meanwhile only moderate encouragement should be given to students, and to those only who, by more than average ability, and by a high degree of preliminary education, give promise that at the end of their course of medical study they will come into the field fully equipped and qualified to engage in what, at best, must be a struggle for existence.

"Again, it is well known that medical men can not go from this to other countries on the American continent or in Europe and assume the practice of medicine until after a strict examination there, and the securing of a certificate in accordance with the laws of the government under which they may choose to settle. We, however, with that excess of liberality found only in this land of refuge for all people, and of the refuse of many, the 'Heathen Chinee' not excepted, receive all comers with open arms, welcome them to share our meager loaf, and our people patronize them to the exclusion, frequently, of those to the manor born, and at least equally qualified by natural ability and education. The halo of mystery and greatness which hovers about a foreign doctor seems to have a peculiar fascination for the American mind, and our imported frater is not always too modest to use this peculiar bent for all the advantage it may bring him."

The Neuralgia of the Toothless.—In the *Journal des praticiens* for April 23d there is an article on this subject by M. Duplay in which he remarks that this form of facial neuralgia is supposed to have its origin in the compression of the dental nervous branches by a condensing alveolar osteitis. The neuralgia of the toothless is seen also in others, for recently M. Duplay observed a case in which the attacks had recurred for seven years, and had not yielded to treatment. Any movement of the mouth produced pain. The majority of the patient's teeth had been extracted, but the neuralgia persisted, and resection of the infra-orbital nerve was done. Nine months after that the pain returned, and all the teeth of the right upper jaw were extracted, except the two incisors and the canine. The pressure had given rise to severe pains. This neuralgia, says the author, was analogous to that of the toothless; there were none of the classical Valleix's tender points, but there were pains radiating toward the ear, the neck, and the eye. Pain was produced by pressure on the alveolar border of the right upper jaw, and, finally, there was an alveolo-dental periostitis. With regard to the treatment, says M. Duplay, sulphate of quinine might be prescribed successfully if the neuralgia was idiopathic and intermittent. Symptomatic neuralgia with a nervous lesion indicates other treatment. This is a specific reflex neuralgia having the dental lesion for its origin. Resection of the facial nerve had been done, but had given only temporary relief. Excision of Gasser's ganglion could be performed, but it was a dangerous operation, and M. Duplay preferred to attempt the resection of the alveolar border near the seat of pain, as advocated by Gross, of Philadelphia, in 1870, and advised it in the neuralgia of the toothless.

The Massachusetts Medical Society.—The treasurer, Dr. Edward J. Forster, of No. 51 Massachusetts Avenue, Boston, writes to us as follows:

A catalogue of *all* the fellows of the Massachusetts Medical Society from its organization in 1781 is now going through the press. If any of your readers will furnish me with any of the Christian names of past fellows, the initials of which are given in the following list, I shall esteem it a favor:

Admitted.		Last known address.
1856.	Barnes, Norman S.	Pittsfield.
1856.	Beals, Homer H.	Pittsfield.
1842.	Bonney, William P.	Fall River.
185–.	Bostwick, Elias W.	Canaan, N. Y.
1851.	Brown, Paris B.	Lowell.
1840.	Calef, Jonathan S.	San Francisco.
1851.	Church, Allen S.	Great Barrington.
1839.	Couch, John W.	Great Barrington.
1848.	Danforth, Nathaniel B.	Chatham.
1838.	DeChene, J. G. F. Miville.	Springfield.
1846.	Dickinson, Samuel F.	Pittsfield.
1855.	Durgin, Elijah S.	Boston.
1817.	Ellis, Joel E.	Augusta, Me.
1851.	Gleason, Ezra W.	Boston.
1832.	Hanaford, William G.	New York.
1841.	Hardy, Benjamin F.	California.
1855.	Kendall, Albert A.	Newton.
1849.	Malcolm, Alexander B.	Council Bluffs, Iowa.
1887.	Maynard-Bellerose, Joseph H.	Worcester.
1853.	McLaughlin, D. L.	Roxbury.
1852.	Peck, William L.	Pittsfield.
1813.	Peet, Edmund C.	New Marlboro'.
1871.	Pratt, Charles B.	Boston.
1858.	Roberts, S. O.	
1851.	Ryan, H.	
1858.	Skinner, Joseph T.	Springfield.
1857.	Smith, George C.	Haverhill.
1841.	Smith, Jonas M.	Brooklyn, N. Y.
1833.	Snow, Asa B.	Boston.
1844.	Stewart, Thomas H.	Springfield.
1834.	Sweet, Samuel B.	New York.
1862.	Tucker, Martin A.	Pittsfield.
1817.	Tyler, Platt B.	West Stockbridge.
1860.	White, Samuel E.	Springfield.
1860.	Williams, A. A. C.	Pittsfield.
1864.	Williams, Alfred G.	North Adams.

How to Find the Upper End of a Severed Tendon.—In the April number of the *Revue des sciences médicales* there is an abstract of an article by M. Félizet, published in the *Bulletin de la Société de chirurgie*, on a means of finding the upper end of a divided flexor tendon of the finger. The procedure consists in complete extension of the neighboring finger or of the two adjoining fingers. In consequence of certain delicate fibrous bands passing between the flexor tendons in the great carpal sheath this brings the upper part of the wounded tendon into view.

Strychnine as an Antidote to Toadstool Poisoning.—The *Nouveaux remèdes* for April 24th cites from a Russian pharmaceutical journal certain brilliant results achieved by Dr. Königsdörfer in the treatment of toadstool poisoning by means of subcutaneous injections of strychnine in doses of 0·015 of a grain. The recovery is said to be sometimes instantaneous, as if by enchantment.

The Dose of Exalgine.—At a recent meeting of the Paris *Académie de médecine*, reported in the *Mercredi médical*, M. Dujardin-Beaumetz stated in reply to a question that great prudence should be exercised in the administration of exalgine, and that it was quite wise to give it in divided doses, each dose not exceeding four grains.

The late Dr. Lutkins, of Jersey City.—At a meeting of the medical profession of Jersey City, held May 11, 1894, the following preamble and resolutions were unanimously adopted:

Whereas, It has pleased the Ruler of the Universe to call from our ranks our friend and colleague, A. A. Lutkins, M. D., a zealous and able member of our profession, generous and noble as a man, as a physician skillful and wise, one who for years has gone up and down our streets night and day ministering to the sick and suffering, to which all classes will testify, ready at all times to counsel with those younger in our profession; therefore

Resolved, That, while testifying to his honorable record and unostentatious labor in the interests of suffering humanity, we deeply sympathize with his bereaved family, and respectfully tender them our sincere condolence, though knowing full well that words do not truly express the respect and esteem which were accorded to our deceased friend and professional brother by all who knew him within medical circles and by the general community.

Resolved, That a copy of these resolutions be presented to his family, and that they be published in the *Medical Record*, the *New York Medical Journal*, and the *Evening Journal*.

[Signed.]
Theodore F. Morris, M. D., *Chairman*.
Edward P. Buffett, M. D.
Joseph F. Finn, M. D.
William Perry Watson, M. D., *Secretary*.

The New York State Medical Association.—The Fifth District Branch will hold its tenth annual meeting in Brooklyn, at No. 315 Washington Street, on Tuesday, the 22d inst., under the presidency of Dr. J. D. Rushmore, of Brooklyn, besides whose address, on The Prevention of the Disagreeable and Dangerous Symptoms produced by Ether as a General Anæsthetic, there will be a paper on The Dietetic Treatment of Consumption, by Dr. T. J. McGillicuddy; one on The Treatment of Chronic Oophoritis with Electricity, by Dr. Edward Sanders; a report of A Case of Chronic Peritonitis with Intestinal Fistula; Cœliotomy, Enterorrhaphy, Recovery, by Dr. Frederick Holme Wiggin; and a general discussion on Vaccination.

The New York Academy of Medicine.—The programme for the meeting of Thursday evening, the 17th inst., included a paper on The Nature and Management of Functional Gastric Disturbances, by Dr. Charles G. Stockton, of Buffalo; and one entitled Clinical Observations on Erosions of the Stomach, and their Treatment, by Dr. Max Einhorn.

At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 21st inst., Dr. W. M. Leszynsky will demonstrate the technique of metallic Electrolysis in the Treatment of Trachoma; and Dr. S. M. Payne will read a paper on Regular Astigmatism.

At the next meeting of the Section in Laryngology and Rhinology, on Wednesday evening, the 23d inst., Dr. Wendell C. Phillips will report The History of a Case of Thyreotomy for Multiple Papillomata of the Larynx, and show the patient.

Original Communications.

SCORBUTUS IN INFANTS.[*]

By WILLIAM P. NORTHRUP, M. D.,
ADJUNCT PROFESSOR OF DISEASES OF CHILDREN
IN BELLEVUE HOSPITAL MEDICAL COLLEGE;
ATTENDING PHYSICIAN TO THE
PRESBYTERIAN, FOUNDLING, WILLARD PARKER, AND RIVERSIDE HOSPITALS;
CONSULTANT PHYSICIAN TO THE NEW YORK INFANT ASYLUM,

AND FLOYD M. CRANDALL, M. D.,
SECRETARY OF THE PÆDIATRIC SECTION, NEW YORK ACADEMY OF MEDICINE;
LECTURER ON DISEASES OF CHILDREN, NEW YORK POLYCLINIC.

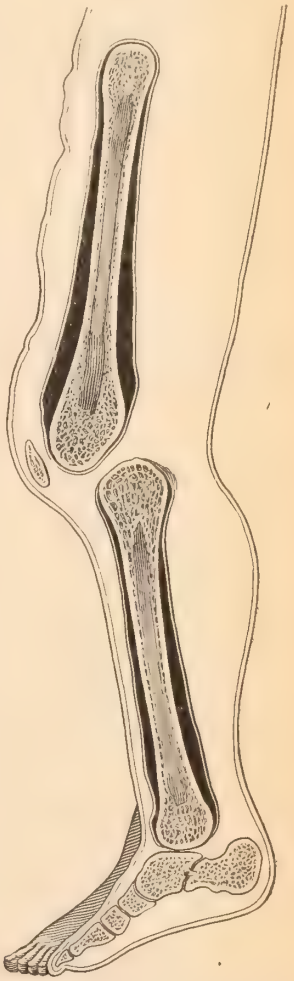
The first-mentioned writer, when he saw at the Foundling Asylum in 1889 a child suffering from scurvy, groped among several diseases for an explanation of the symptoms. No diagnosis having been made, the baby was not treated for scurvy, and, not being treated for scurvy, it died. The post mortem findings revealed the true nature of the disease. This was the first case of undoubted scorbutus in an infant recorded in the medical literature of the United States, and it is yet the only case completed by a full autopsy record. A few cases of cachexia thought to be scorbutic had been seen by Jacobi and Forchheimer, but had never found their way into indexed literature.

Two years later the writer met with a typical case in consultation. This was in rich surroundings, was instantly recognized, treated, and quickly cured. These two cases compass the entire field. One, a foundling undiagnosticated, came to autopsy, showing typical lesions. The second, early diagnosticated and promptly treated, was better in a few days, and well in a month. The first might be an institution curiosity, but the second brought the disease into the field of the general practitioner.

Being suspicious that scurvy might be of occasional occurrence in general practice, the same writer, in 1891 set about finding cases like the two in his possession. The surgeon general's office could furnish but one possible but not typical case. In New York and vicinity seven well-marked cases, by dint of search, were added to the two, also two more less definite—making a total of eleven. These eleven cases were reported in a paper read before the American Pædiatric Society in September, 1891.

The important features in the pathological anatomy of scurvy are well illustrated in the asylum case already referred to. The gums showed the characteristic signs of hæmorrhagic gingivitis, being dark, spongy, and bloody. The main interest otherwise lay in the condition of the legs. The left thigh was symmetrically enlarged, but both thighs were above normal in size. The femur was normal at its upper extremity. The lower half was invested with a black, grumous, subperiosteal layer of blood. The lower epiphysis was detached and the lower end of the shaft macerated, eroded, and soft, lying loose in the black, disintegrating blood-clot. The tibiæ were surrounded by thin, dark, hæmorrhagic layers beneath the periosteum, and the proximal portions of both were congested. The fibulæ and the bones of the upper extremities were normal. The accompanying illustration was drawn from a specimen which consisted of a lateral half of the lower limb of the less affected side. Microscopical examination of the bone disclosed no syphilitic or rhachitic changes, and no inflammatory changes in bone or periosteum. The softened, macerated bone gave no evidence of suppuration, but there was moderate congestion of the femur and the upper extremity of the tibia.

All the lesions of scurvy are hæmorrhagic in character, due probably to diapedesis. The most characteristic are subperiosteal hæmorrhages, chiefly of the long bones. The femora are most commonly affected and there is a tendency to separation of the epiphyses. Hæmorrhages into the mucous surfaces are usually present, the gums being chiefly affected, presenting a condition to which the term hæmorrhagic gingivitis may be appropriately applied. Deep hæmorrhages into the muscles are also of frequent occurrence. Eustace Smith believes subperiosteal hæmorrhage to be the most characteristic lesion of the disease. Strümpell says that deep extravasations are the peculiarity of scurvy, and that next in importance is the peculiar condition of the gums and mucous membrane of the mouth.



A vertical section of the thigh and leg in a case of infantile scorbutus (Case 2 in the table). The dark areas along the femur and tibia represent subperiosteal hæmorrhage. (Drawn from a specimen preserved in the museum of the College of Physicians and Surgeons.)

That infantile scurvy is not simply a rare curiosity among diseases is proved by the fact that at a meeting of the Academy of Medicine on February 15th a hundred and six cases were reported. Eight cases have since been added to the list, making a total of a hundred and fourteen authentic cases. Dr. Louis Starr, of Philadelphia, in a communication read at this meeting, reported thirteen cases, all in private practice and in the best of surroundings. All the patients recovered except one. The autopsy findings in that case were identical with those reported in this article. Dr. Forchheimer, of Cincinnati, in a communication read at the same meeting, reported ten cases. He believed that the diagnosis rested upon the hæmorrhagic nature of the symptoms, and that all conditions classed under the head of purpura, peliosis, etc., were in fact scorbutic in nature.

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[*] Based on a paper read by Dr. Northrup before the New York Academy of Medicine, February 15, 1894, and on clinical material collected and edited by Dr. Crandall.

He referred to the peculiar muddy complexion which was common in these cases, and laid especial stress upon the result of treatment as an important point in the diagnosis. Dr. Rotch, of Boston, had seen nearly forty cases. He was in serious doubt whether such a disease as acute rhachitis existed. Some of his cases had been superadded to rhachitis. After recovery of the scurvy, the rhachitis took the usual slow course. Dr. Blackader, of Montreal, and Dr. Booker, of Baltimore, had not met with scurvy in infants.

There is without doubt some uncertainty regarding both the true nature of scurvy and its true causes. There are probably certain obscure hæmorrhagic conditions which are scorbutic in character. The ordinary cases, however, present a remarkably uniform collection of symptoms. A case which occurred in the practice of one of the writers presented the following very typical history of scurvy in an early stage:

A male child of thirteen months had been nursed for three months. It was then weaned and fed on cow's milk for four months, then on Nestlé's food, then on Mellin's food with a small proportion of milk, and finally for six weeks, at the advice of a friend, almost exclusively on prepared barley. For several weeks the baby had been fretful and cross and for two weeks had been especially irritable and had evinced pain when handled. It was inclined to lie quiet and was irritable when disturbed. Blood had been noticed twice on the lips, but had been attributed to injury from a rough nipple. Swelling above the right knee had been noticed for twenty-four hours and it was remembered that the child had not moved the leg naturally for several days.

On examination, the child was found to be anæmic and showed moderate signs of rickets. There were four teeth. The gums around each tooth were dark red and spongy, and, on pressure, bled slightly. The slightest movement caused the child to cry out with pain, and this was most marked when the hips or legs were moved or pressed upon. The right thigh was considerably swollen, the skin being tense and slightly red. It was excessively sensitive to pressure, but did not pit. There was also slight tenderness at the hip. The child was drawn up in a peculiar attitude with the legs flexed. On the leg there were one or two spots slightly discolored, but there was no distinct purpura. The treatment consisted solely of top milk, beef juice, and orange juice. Improvement in the gums was noticed in two days. The soreness rapidly decreased, and there was complete recovery from all other symptoms in less than three weeks.

Of the hundred and fourteen cases referred to, a detailed history has been obtained in thirty-six. These histories are presented in the accompanying table. It has been impossible to enter all the details in many of the histories. Certain facts are referred to, therefore, which do not appear in the table.

No.	Age.	Sex.	Attendant.	Surroundings.	Symptoms.	Lesions, signs.	Diet.	Treatment.	Course.	Remarks.
1	16 mos.	F.	W. P. Northrup, New York.	Private.	Pain on motion; no rickets; anæmia.	Swollen right thigh; spongy gums; no ecchymoses.	Proprietary food almost exclusively.	Correct diet (milk, beef juice), orange juice.	Improved in five days, markedly in ten days, well in thirty days.	Had been mistaken for rheumatism.
2	18 mos.	F.	W. P. Northrup, New York.	Foundling asylum.	Pain; anæmia; metallic pallor; temperature, 101°; passages black.	Swelling, both thighs and knee; gums bleeding; "black eye."	Nursed by woman also nursing her own child.	Vegetable acids.	Died of pneumonia; autopsy.	
3	6 yrs.	M.	R. Van Santvoord, New York.	Idiot asylum.	Not reported. Patient a helpless idiot; confined to bed.	Extensive hæmorrhages at upper end of both humeri.	....	....	Died; autopsy.	Diagnosis made only after death.
4	....	....	A. Caillé, New York.	Private.	....	Subperiosteal effusion of blood; swelling; ecchymoses, skin and gums.	....	....	Died; autopsy.	
5	12 mos.	F.	C. H. Richardson, New York.	Dispensary.	Rickets present; blood passed from bowels and stomach; temperature, 101°.	Subperiosteal effusion, both legs; spinal curvature; gums soft.	Improper diet; condensed milk.	"Live diet," orange and lemon juice.	Purpuric spots disappeared in three days; case lost sight of.	Blood effusion proved by hypodermic needle.
6	2 yrs.	M.	H. Goldenberg, New York.	Dispensary.	No rickets; bleeding from nose, mouth, bowels; hæmaturia.	Feet, legs, scrotum swollen; gums spongy, bleeding; profuse ecchymoses.	Milk diet exclusively.	Fresh vegetables, lemon juice, chlorate of potassium.	Child well in a few days.	Gangrenous spots in pharynx; breath fœtid.
7	16 mos.	M.	W. P. Northrup, New York.	Private.	Appeared well nourished until these signs appeared.	Hæmorrhages about one ankle; spongy gums.	Proprietary food exclusively.	Lime, hydrochloric acid, tincture of iron.	Slowly and gradually recovered.	Had been diagnosticated as rickets.
8	3 yrs.	....	F. Delafield, New York.	Private.	....	Characteristic signs of scurvy.	Exclusive meat diet for about three months.	Rational diet.	Symptoms quickly disappeared.	
9	11 mos.	F.	L. E. Holt, New York.	Private.	Extreme marasmus preceding scurvy; pain, tenderness.	Excessive swelling of left knee; gums spongy, bloody; no ecchymoses.	Proprietary food exclusively.	....	Died after two months; autopsy: hæmorrhages, separation of epiphyses.	Blood effusion proved before death by needle.
10	13 mos.	...	W. F. Lockwood, Baltimore.	Private.	No rickets; rather anæmic; pain in legs on motion; diarrhœa.	Left leg semiflexed, everted; gums spongy, bleed slightly; ecchymoses.	Proprietary food exclusively.	Fresh undiluted milk, potato, orange, peach juice.	Marked improvement in a few days; second visit not required.	Complexion sallow; stools often bloody.
11	11 mos.	F.	G. H. Whitcomb, Greenwich, N. Y.	Private (patient resided in New York).	No rickets; great pain when handled; anæmic; constipated.	Legs partly flexed, rigid, swollen; gums spongy, bleeding; purpura.	Proprietary food exclusively for six months.	Fresh milk, beefsteak, orange juice.	Completely recovered in three weeks.	Had been previously diagnosticated as rheumatism.
12	32 mos.	M.	J. J. Reed, J. L. Smith, New York.	Foundling asylum.	Breath foul; anæmic.	Legs tender to touch; gums spongy, bleeding; thigh enlarged.	Unknown; was boarded outside the asylum.	Diet; orange juice.	Immediate improvement.	Had been treated four days for the gums alone.
13	13 mos.	M.	F. M. Crandall, New York.	Private.	Slight rickets; pain when handled; anæmic; diarrhœa; no hæmorrhages.	Swelling of right thigh; spongy and bleeding gums; leg flexed.	Proprietary foods for five months; prepared barley six weeks exclusively.	Milk, beef juice, orange juice.	Improvement in three days; recovery in less than three weeks.	First improvement seen in mouth.
14	11 mos.	F.	H. L. Taylor, New York.	Private (patient resided in the South).	Pain on movement; anæmic; temperature, 102·5°; no rickets; condition critical.	Swelling of right thigh and ankle; gums spongy, bleeding; purpura.	Condensed milk exclusively.	Milk, beef juice, orange juice.	Improvement at once; spine flexible in two weeks.	Pseudo-spinal paralysis marked; legs motionless.

No.	Age.	Sex.	Attendant.	Surroundings.	Symptoms.	Lesions, signs.	Diet.	Treatment.	Course.	Remarks.
15	13 mos.	....	H. L. Taylor, New York.	Private (patient resided in the South).	Great pain, especially when moved; well to eleven months.	Swelling of both legs; gums dark, swollen, bloody.	Condensed milk exclusively.	No antiscorbutic treatment.	Died of exhaustion. (Not seen personally by Dr. Taylor.)	Legs motionless; probably pseudo-paralysis.
16	8 mos.	M.	Louis Starr, Philadelphia.	Private.	No rickets; anæmia; pains in legs; pain on handling.	Swelling of knees and ankles; gums spongy, bleeding; legs passive.	Sterilized milk, sugar, and cream.	Plain milk, beef juice, orange juice.	Complete recovery within three weeks.	No paralysis; bowels regular.
17	12 mos.	M.	W. L. Stowell, New York.	Dispensary (tenement).	Rickets present; anæmia; pain on motion in upper and lower extremities.	Subperiosteal effusion left leg, right humerus; gums spongy, bleeding.	....	Milk only.	Steady improvement; electricity given previously for "paralysis" without result.	Right humerus broken by rough handling.
18	11 mos.	M.	W. L. Stowell, New York.	Private (country).	Anæmia; rapidly developed pain on moving legs; nephritis.	Both knees and ankles hard swollen.	Proprietary food for four months and a half; mixture of cream, sugar, and water.	Milk; syr. ferri iod.; syr. hypoph. co.	Died (probably of kidney lesions).	Was thought to have been rheumatism.
19	4 mos.	M.	W. L. Stowell, New York.	Dispensary (tenement).	Pain on motion; legs and arms passive.	Subperiosteal effusion of legs, thighs, and forearms.	Condensed milk.	Milk, iron, hypophosphites.	Steady but slow improvement.	No true paralysis; followed close upon influenza.
20	9 mos.	F.	W. P. Watson, Jersey City.	Private.	Anæmic; emaciated; severe pain on motion; no petechiæ.	Both legs above and below knees swollen and tender; gums spongy, bleeding.	Condensed milk (four months); then various proprietary foods.	Milk, juice of rare beefsteak, orange juice.	Decided improvement reported after twelve days.	Pseudo-paralysis of legs.
21	12 mos.	F.	O. F. Rogers, Dorchester, Mass.	Private.	Slight rickets; well nourished to eleven months; pain on handling.	Right leg swollen, painful, flexed; gums red, spongy, bleeding.	Proprietary food and sterilized milk.	Unsterilized milk, beef juice, orange juice.	Better on second day; moved leg on third; great improvement on sixth.	Pseudo-paralysis (slight) of right leg.
22	10 mos.	F.	O. F. Rogers, Dorchester, Mass.	Private.	Rickets; pain on handling; excessive purpura (early); temperature, 99° to 101°.	Great swelling above knees and ankles; no teeth; gums not spongy.	Completely sterilized milk and oatmeal jelly.	Orange juice, beef juice, fresh milk (later).	Improved at once; began to move legs in a few days; swellings gone in five weeks.	Was absolutely helpless for six weeks.
23	14 mos.	F.	G. W. Goss, Roxbury, Mass.	Private.	Well nourished; very slight rickets; pain on touching legs; restless, fretful.	Swelling of both legs; gums spongy; ecchymosis of vaccination scar (two months old).	Evaporated milk and a proprietary food.	Beef juice, cod-liver oil, phosphorus; diet not changed.	Slight improvement; diet changed to fresh milk; immediate improvement; rapid recovery.	Pseudo-paralysis of legs marked.
24	13 mos.	F.	C. H. Leonard, Providence, R. I.	Private.	Well nourished; no rickets; great pain on touching legs; temperature, 102°.	Legs very tender, not swollen; gums purple, swollen, spongy; no fetor.	Fed five months continuously on peptonized boiled milk.	Chlor. potass., no result; fresh milk, meat juice, orange.	Improved in three days; cured of all symptoms in two weeks.	Spongy gums had been noticed three weeks.
25	11 mos.	M.	W. A Tremaine, Providence, R. I.	Private.	Rickets present; intense pain on touching legs or ankles.	Knees and ankles swollen; mouth symptoms not clearly stated.	Sterilized milk nine months, then various proprietary foods.	Iron, hypophosphites, etc.	Died; no autopsy.	
26	13 mos.	F.	W. L. Carr, New York.	Dispensary (patient lived in Paterson).	Well nourished; not anæmic; slight rickets; intense pain on motion; bowels loose.	Thighs swollen, not red; gums spongy, bleeding; petechiæ early in disease.	Breast milk six months, then condensed milk and proprietary food.	Fresh milk, beef juice, orange juice.	Rapid recovery; gums better in three days.	
27	9 mos.	M.	W. L. Carr, New York.	Private (patient lived in Indianapolis, Ind.).	Emaciated; anæmic; slight rickets; severe pain; diarrhœa.	Thighs, tibiæ, forearms swollen; gums normal (no teeth); no hæmorrhages.	Bottle-fed five months, then given two proprietary foods.	Fresh milk, beef juice, fruit juice.	Rapid improvement; legs regained power in eight days.	Pseudo-paralysis.
28	2½ yrs.	F.	H. R. Purdy, W. L. Carr, New York.	Dispensary.	Poorly nourished; anæmic; no rickets.	Legs and thighs tender; gums bleeding; breath foul.	Poor milk; would not eat vegetables.	Milk, fruit, fresh vegetables.	Symptoms, except anæmia, disappeared in two weeks.	
29	3½ yrs.	F.	C. G. Kerley, New York.	Institution.	Intermittent temperature due probably to malaria.	Purpuric spots; gums swollen, bleeding; ulcerated teeth loosened.	Proprietary food, milk, and bread; would not eat vegetables and meat.	Milk, meat, lemon and orange juice; potass. permang.	Marked improvement in seven days; cure complete in twenty-one days.	First diagnosis: purpura, ulcerative stomatitis, malarial disease.
30	9 mos.	M.	J. E. Winters, New York.	Private.	Rickets, pain.	Legs swollen; skin tense, shiny; gums blue, spongy.	Evaporated milk.	Sterilized milk.	Rapid recovery.	
31	10 mos.	M.	J. E. Winters, New York.	Private.	Moderate rickets.	Both legs swollen, tender; gums spongy, bleeding.	Condensed milk.	Sterilized milk.	Well in one month.	
32	9 mos.	F.	J. E. Winters, New York.	Private.	Pain; fear of being handled.	Swelling over tibiæ, slight discoloration; gums blue, spongy around incisor teeth.	Proprietary food from birth.	Sterilized milk.	Well in less than three weeks.	
33	11 mos.	M.	J. E. Winters, New York.	Private.	....	Eyelids swollen, ecchymotic; gums swollen, spongy, bleeding.	Equal parts of cow's milk and water.	Sterilized milk.	Perfect recovery in three weeks.	
34	10 mos.	M.	L. W. Hubbard, New York.	Private.	Indigestion; extreme pain on movement of legs; irritable.	Hard swelling of one thigh and leg; gums ulcerated; purpura.	Evaporated cream.	Fresh milk, beef juice, orange, cod-liver oil.	Recovery complete in three weeks.	Child undersized; has clubfoot.
35	18 mos.	F.	E. Le Fevre, New York.	Private (country).	Wasting; diarrhœa; pain on movement; irritability.	Swelling of legs; gums inflamed, ulcerated.	Artificially prepared food (proprietary).	Fresh cow's milk, expressed beef juice.	Perfect recovery in two weeks.	
36	13 mos.	M.	E. Le Fevre, New York.	Private (country).	Poorly nourished; diarrhœa; pain on movement; irritable.	Nodular swellings and gingivitis.	Artificially prepared food (proprietary).	Fresh cow's milk, expressed beef juice.	Perfect recovery in two weeks.	

Sex is referred to in thirty-two cases—sixteen being males, sixteen females. The youngest patient was four months old, the oldest was an idiot of six years. Twenty-eight children (seventy-nine per cent.) were between eight months and eighteen months; twenty-two children (sixty-three per cent.) were between nine months and thirteen months. The disease is most common, therefore, at about the end of the first year of life.

Investigation of the surroundings and social condition shows that twenty-six patients were seen in private practice and ten in institutions or dispensaries. In fourteen the surroundings were stated as being excellent, rich, or luxurious. In but two cases were the surroundings of private patients stated as especially bad. The surroundings of institution patients were especially poor in five instances. Ten of these children lived in the country or in small towns. It is evident that scurvy is not essentially a disease of large cities, and especially not of tenement-house regions. Unhygienic surroundings in themselves are clearly not an important feature in its production. Some of the worst cases reported occurred in families in which the children received the most painstaking care. Other causes must therefore be sought.

The most evident and probably the most active cause of scurvy is improper diet. The exact diet is known in thirty-three cases. We find that twelve of these children (thirty-six per cent.) were fed on a proprietary food exclusively; six (eighteen per cent.) had received an exclusive diet of condensed milk or evaporated cream, while three received a combination of these two foods. Over sixty-three per cent., therefore, were fed upon a diet of proprietary foods and condensed milk. Two children received sterilized milk exclusively and three a weak mixture of milk and water. One was fed on condensed milk, one on boiled and peptonized milk, one on barley water. Two were asylum babies who were " boarded out." In only one was fresh milk the exclusive diet, but it was not stated whether it was given pure or diluted. It is seen, therefore, that improper methods of feeding were pursued in every case with perhaps a single exception. *The experience of most observers agrees with the facts here presented, that the exclusive use of a proprietary food or of evaporated milk is the most common accompaniment of scurvy.* No one food seems to be a special offender, except as it is more generally used. The one food which is probably the most largely used in this country was mentioned most frequently. Should it come into general use it would no doubt obtain the monopoly on scurvy, though it would probably not exhibit its scurvy cases in its public advertisements.

Sterilized milk also is believed by some to be capable of producing scurvy. The evidence seems to be undoubted that milk sterilized for a long time at a high temperature has caused this disease. The statement made by Holt, that in three great institutions of New York city where infants are fed almost exclusively on sterilized milk not a single case of scurvy has developed in five years, would seem to show that where this process is not carried to an unreasonable degree no danger is to be apprehended. No such charge has been made against Pasteurized milk, which is a safer food for a variety of reasons. Sterilized milk requires as careful modification as raw milk. If it is not properly modified it may cause serious disturbance. It is possible, as suggested by Winters, that lack of proper preparation has been a factor in certain cases as well as the sterilization. Sterilized milk has proved too valuable a food in large cities to be thoughtlessly set aside until it is positively proved to be unsafe. Weak milk mixtures seem to have been a causative factor in three cases. One of these, a child of eleven months, was fed upon nothing but milk diluted with an equal amount of water. Winters has recently drawn special attention to the fact that an excessively weak mixture may be an active cause of the disease.

Anæmia was definitely noted as present in fifteen cases, and as not present in but one case. Metallic pallor or extreme sallowness was observed four times. The nutrition was noted as good in four cases. Malnutrition was specially noted seven times, and marasmus seven times.

Rhachitis was referred to nineteen times. It was to a marked degree present in five cases, and slight rhachitis in six. It was definitely not present in eight cases. In several instances the scurvy was referred to as being ingrafted upon or added to the rickets. When the symptoms of scurvy disappeared under treatment, the rhachitic condition remained unchanged and disappeared slowly. Those who have seen most scurvy seem to be most skeptical as to the existence of such a disease as acute rhachitis. In some cases it is certain that the condition described under that name is, in fact, scurvy superadded to rickets.

The condition of the bowels was referred to in nine cases. Diarrhœa was present in six; constipation in two. In one case they were regular. Diarrhœa has been especially noticed by Carr.

Fever was frequently noted, and was commonly intermittent in character. It rarely went above 101°, but occasionally reached 103°. It seemed in many instances to be an integral part of the disease, but sometimes it seemed clearly due to other causes.

Pseudo-paralysis is an interesting and very important symptom, which may readily mislead the unwary. In a paper read before the Academy of Medicine, Dr. Henry Ling Taylor reported two marked cases: He believed that essential paralysis could not be attributed to scurvy, but that the condition was due to the pain caused by contraction of the muscles on their tender periosteal attachments. This might become so intense that all motion would be instinctively avoided. When joint irritation existed, there would be local reflex muscular rigidity, which would also operate to prevent motion. It was to be distinguished from other paralytic affections by the accompanying symptoms of scurvy, normal knee reflexes, and speedy subsidence on antiscorbutic diet. The spine and upper extremities were sometimes affected, but more commonly the lower extremities were alone involved. Pseudo-paralysis was definitely present in nine cases. It involved one leg in one case, both legs in three, legs and arms in one. Two children were reported as perfectly helpless, and in two cases the location was not stated. In no instance did the paralysis persist after the subsidence of the scorbutic symptoms. The diagnosis of infantile paralysis had been made in no fewer than three of these cases, and one had been treated for some time by electricity.

Pain was more common than any other symptom. It was, in fact, present in every patient in whom its presence or absence was noted. It was specified as in the legs in ten cases and in the arms in three. It was usually severe and often so excessive as to cause the child to scream out with fear at the approach of the attendants. It was commonly marked only upon motion or handling. The child suffering from scurvy is therefore inclined to lie quietly in any position in which it is most comfortable. As a rule, the legs are slightly flexed.

Passages of blood were noted from the stomach in two cases, from the bowels in four, from the nose in two, and from the bladder in two; it was definitely noted as not present in but three patients. In the remaining cases no mention was made of this symptom.

Subcutaneous hæmorrhages were noted in at least fifteen cases; "purpura" was observed seven times; "petechiæ," three times; "ecchymoses," five times. In one child a vaccination scar two months old became ecchymotic. In three cases hæmorrhage took place in the eyelids, causing "black eye," and adding greatly to the wretched appearance of the little sufferer.

The condition of the gums was noted in thirty-two cases. In two instances there were no teeth, and the gums were neither spongy nor bleeding. This peculiarity has been recorded by numerous observers. When a few teeth only have appeared, the changes in the gums are, as a rule, limited to the gums bordering these teeth. In twenty-four cases the gums were described as spongy, inflamed, or purple. In three cases they were described as ulcerated, and in three as simply bleeding. Actual bleeding of the gums was noted in nineteen cases. The condition of the gums was therefore one of the most constant and characteristic symptoms.

Swelling of the extremities was noted in thirty-three cases. The skin over the swelling was, as a rule, tense and shining; it was often purplish or livid, but sometimes appeared normal in color; it was of normal temperature, and did not pit on pressure. As the swelling subsided, thickening of the shaft of the bone was in some instances detected. Liability to fracture at the epiphyses was a marked feature.

In ten cases both legs were said to be involved, and in one one leg, but the exact location of the swelling was not mentioned. In the remaining twenty-two cases in which the exact location was noted the thigh was involved sixteen times, the leg below the knee thirteen times, the ankle five times, the knee four times, and the arm three times. The accompanying table shows the various locations of the lesions:

One thigh	4
Both thighs	4
Both thighs and legs	3
Both thighs, legs, and forearms	2
One thigh and one knee	1
One thigh and one ankle	1
One thigh and one leg	1
Both legs, feet, and scrotum	1
One leg and one humerus	1
Both knees and ankles	3
One ankle	1
	22

The results of antiscorbutic treatment are, almost without exception, very brilliant. Many of these children were treated at first by general tonics, acids, phosphorus, or chlorate of potassium. The result of such treatment, without exception, was unsatisfactory. It seemed in most instances to produce no effect whatever upon the course of the disease. The subsequent improvement under antiscorbutic regimen was therefore especially gratifying to the attending physician. The one thing absolutely necessary to insure a cure is fresh food. Fresh cow's milk is, by all means, the most important element. It is both food and medicine. It should be properly diluted and prepared to meet the requirements of the case. It is well to combine it with a cereal, as Jacobi has suggested. If it requires diluting, barley water may be employed. In warm weather it may be Pasteurized, or even moderately sterilized. Expressed beef juice is a valuable adjuvant in many cases. There seems but little doubt also that orange juice is an element of decided value. Children will certainly recover without it if put upon a proper diet, but the evidence seems decided that it aids materially in the cure of these cases. It has the merit of being easily administered, for these little sufferers, without exception, take it with marked avidity. When rhachitis is present it is best to administer phosphorus, which may be given in the form of the official elixir. The condition of the stomach and bowels should also receive attention, and tonics are not contraindicated. It should be clearly understood, however, that all drugs are unavailing for the cure of scurvy, and are secondary to milk, beef juice, and orange juice. The swollen and painful extremities may be sometimes relieved by inunctions with oil. The child should be handled with the greatest care, not only to avoid unnecessary suffering, but because there is especial liability to fracture of the bones.

It seems probable that scurvy is increasing in frequency. The more general use of patent and evaporated foods to the exclusion of milk will certainly have the result of increasing the number of these cases. It is quite certain, however, that the disease is not a new one, but has been overlooked or mistaken for some other condition. Excluding the diagnosis of acute rhachitis, rheumatism seems to have been the mistaken diagnosis in the greater number of cases. Several cases have been treated simply as purpura, two or three as ulcerative stomatitis, three as infantile paralysis, and one or two as simple rhachitis. One case within the writer's knowledge was considered to be a sarcoma of the knee; two cases had been treated as osteitis of the knee.

In the light of our present knowledge we may draw the following conclusions:

1. Scurvy may appear at any period of infancy or early childhood, but is most common between the ninth and fourteenth months.

2. The lesions are hæmorrhagic in character, due probably to diapedesis. The most characteristic are subperiosteal hæmorrhages. Hæmorrhages into the muscular tissues, into the skin, and mucous membranes are more or less constant.

3. It occurs in every grade of the social scale, but is more frequent among the rich than among the poor. The neglected child who eats everything at the table may become rhachitic or marasmic, but he obtains enough fresh food to protect him from scurvy. It very rarely occurs in asylums and hospitals, because in recent years feeding in such institutions has been more rational than in many private families.

4. Lack of fresh food is the most important cause

The use of the proprietary foods and condensed milk produces more scurvy than all other causes combined. Even fresh milk in small proportions is not sufficient to insure protection.

5. Anæmia and malnutrition are almost invariably present; a peculiar sallow complexion is common.

6. Scurvy is frequently superadded to rhachitis, but in a considerable number of cases no evidences of rhachitis are present. So-called acute rickets is in most cases, probably in all, rickets complicated by scurvy.

7. Pain is a constant symptom; it develops early and is usually intense.

8. A varying degree of immobility of the extremities is common, and is frequently so marked as to simulate paralysis. This pseudo-paralysis disappears with the subsidence of the scorbutic symptoms.

9. Subcutaneous hæmorrhages, as well as hæmorrhages from the cavities of the body, are very common, but are not necessary to a diagnosis of scurvy.

10. The condition of the gums is characteristic. They are purplish, soft, spongy, and bleeding, and frequently show decided ulcerations. When the teeth have not been erupted, changes in the gums are usually slight or entirely absent.

11. Painful swelling of the lower extremities is the most constant symptom; the upper extremities are rarely involved. The thigh is affected more frequently than any other region.

12. Children suffering from scurvy commonly present the following symptoms: Anæmia, intense pain on motion, spongy and bleeding gums, swelling of the lower extremities, usually at the thigh. There may also be purpura or ecchymoses, discharge of blood from the various cavities of the body, and pseudo-paralysis.

13. Scurvy, when untreated, is a very fatal disease; when recognized and properly treated, a rapid and complete cure is usually effected. The result of antiscorbutic treatment is, in fact, one of the most certain means of diagnosis.

14. Scurvy may be mistaken for rheumatism, stomatitis, rickets, sarcoma, osteitis, and infantile paralysis.

15. Scurvy is a dietetic disease and must be cured by dietetic treatment. Fresh milk, beef juice, and orange juice are the most effective remedies.

THE THERAPEUTIC USES OF SPARTEINE.[*]

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In a paper which I had the honor of reading before the Texas Academy of Science last December, I fully discussed the physiological actions of sparteine. From a study of the literature of the subject, and particularly from the results obtained in my experimental research, I have found, in corroboration of previous experimenters, that sparteine, one of the active principles of *Cytisus scoparius* or *Sarothamnus* (?) *scoparius*, or common broom-plant, is, not unlike digitalis, a decided stimulant to the general circulation. On the dog, I found that the drug, given hypodermically or intravenously in what may be called therapeutic amounts, acted particularly as a cardiac stimulant, increasing the arterial pressure and the force of the pulse. The rate of the heart-beat is at first somewhat accelerated, and is soon followed, however, by a distinct slowness, but the energy of the cardiac contractions is considerably increased, as evidenced by the large size and fullness of the individual pulse waves. This augmented cardiac force is also observed when the drug is applied directly to the batrachian viscus *in situ*, or when the isolated heart of the frog is placed in a sparteine solution, as well as when it is administered subcutaneously to other animals or to man. Large doses cause a fall of the arterial pressure, and even when the column of mercury in the manometer is far below the original height the increased cardiac energy is apt to persist. I have likewise noticed that under poisonous amounts of the agent the heart usually ceases in systole, and generally *after* the stoppage of the respiration, death being therefore produced by failure of the latter function. The drug undoubtedly acts powerfully upon the heart itself, whether on its intrinsic ganglia, or on the cardiac muscle, or on both; it exercises some action on the vaso-motor system also. For a fuller consideration of the physiological actions of sparteine on the circulation and on other portions of the animal economy I refer the reader to my previous paper.[*]

As a therapeutic agent sparteine is but sparingly spoken of in the text-books. Such a disregard for a useful remedy, it seems to me, is not justifiable. In carefully looking over the literature pertaining to the use of this agent in practical medicine (the largest number of references at my command were kindly furnished me by my former learned teacher, Professor Alfred Stillé, of Philadelphia, to whom I herein wish to express my obligation), I find that it has been tried by a considerable number of clinicians, and generally, as will be seen, with good results. I believe it will be proper for me to give a brief summary of these studies before giving my own experience and that of other gentlemen who have been kind enough to assist me in the matter.

Sée [†] affirms that the drug is valuable in cardiac affections, increasing diuresis; that it is superior to other heart remedies in its ability to control general nervous excitement and in its power to regulate an irregular pulse. In a later observation the same writer comes to regard the medicament as an auxiliary to other cardiac remedies.[‡] The views of Sée in regard to the properties of sparteine as a heart tonic have been confirmed in the main by Buckler,[#] Roland,[‖] and Voight.[△] Foy [◊] found it as a heart tonic a good substitute for digitalis and convallaria.

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[*] Read before the Texas State Medical Association, at Austin, April 24, 1894.

[*] *American Medico-surgical Bulletin*, April 1 and 15, 1894.

[†] *Bull. gén. de thér.*, cix, 523; also *Arch. génér.*, p. 117, January, 1886.

[‡] *La Médecine moderne*, July 2, 1891.

[#] *Boston Medical and Surgical Journal*, p. 627, June, 1886.

[‖] *Le Poitou médical*, 1887.

[△] *Medic. Chron.*, April, 1887; also *Med. Record*, xxxiii, 666.

[◊] *Medical Press and Circular*, xli, 121, 1886.

Leo[*] finds that sparteine causes no increase in the amount of urine in healthy individuals. He recommends it in cardiac disease, especially when there is lack of compensation and it is then desired to produce diuresis. On the other hand, Prior[†] believes that even in health, under certain circumstances, the agent is capable of exercising a diuretic action. He regards it as more useful in valvular lesions than in disease of the cardiac muscle. The same writer tried it in bronchial asthma, but without any good results.

Gluzinski[‡] observed that the medicament slowed the heart's action and increased the arterial pressure. In his opinion, sparteine, though less powerful than digitalis, is more rapid in its action, and therefore may be used when there is danger in delay. He does not believe that sparteine removes cardiac arrhythmia. A similar opinion has been expressed by Stoessel,[#] who considers sparteine inferior to digitalis in cardiac arrhythmia. In his experience, again, the drug exercises no influence in fatty degeneration of the heart, and he further found it without power as a diuretic.

Langgard[‖] has reported eighteen cases of heart disease in which sparteine produced beneficial results, results which have been more or less corroborated by Clarke.[△] This latter observer has arrived at the conclusion that sparteine can be used with advantage in heart disease, particularly hypertrophy, when digitalis is contraindicated. He found in general that the remedy slowed the rate but increased the force of the pulse, causing at the same time a rise of the arterial pressure. The forms of disease treated with sparteine, with the effects produced, are thus specified by Clarke: 1. In mitral regurgitation the results were very striking. 2. In mitral stenosis the benefits were less and less pronounced. 3. In aortic regurgitation, with greatly enlarged and excited heart, small doses were useful. 4. In asthma the influence was good, but very tardy. 5. In palpitation, without organic disease of the heart, the relief was immediate; and, 6. In Graves's disease it occasioned great improvement.

Pawinski[◊] studied the drug very carefully in thirty-three cases, and found that it produced diuresis, no disturbances of digestion, and that it had no cumulative action; that the effects of the remedy became pronounced in from thirty to forty minutes after its ingestion. He also found it serviceable in the functional cardiac disease of neurasthenic and anæmic individuals, and of heavy drinkers and excessive smokers. Similar good results were obtained in asthma, Graves's disease, chronic bronchitis, and emphysema, particularly in those cases in which digitalis was not tolerated. The author, however, warns against the use of the medicament in cases in which the cardiac muscle is believed to have undergone degeneration.

Maslowski[*] employed the remedy in three cases of cardiac disease, and found it a rapidly acting and powerful heart tonic and diuretic. In his experience the drug had no cumulative action. Identical observations have been made by Livierato[†] and Fereira.[‡] The latter author obtained excellent results in functional and organic affections of the heart, and further believes sparteine to be of special service in those cases in which digitalis is contraindicated.

Pawlow[#] thinks that sparteine is only indicated in cases in which compensation is undisturbed, while, on the other hand, Kurloff[‖] believes the remedy only useful in cases where there is lack of compensation without organic lesion—that is, in those cases in which more energetic drugs are contraindicated.

Levaschew[△] is of the opinion that sparteine is capable of promptly re-enforcing and controlling a weak and irritable heart. In his hands the remedy has proved successful in steadying the pulse and the respiration. He, however, has found it powerless in degeneration of the cardiac muscle, and again in those cases in which the œdema was excessive. He further observed that in cases of cardiac disease the remedy causes an increase in the amount of urine secreted. Though not asserting the fact, the author has thought that sparteine produced digestive disturbances, and, on the whole, considers the drug inferior to digitalis, adonis, and strophanthus.

L. A. Gluzinski[◊] found sparteine useful in the first stages of heart failure, and states, further, that the medicament is prompt in its action.

As a diuretic sparteine has rendered good service in the hands of Bruen.[↧] This author, however, believes that the agent has a cumulative action. According to Houdas,[↕] sparteine is indicated in lack of compensation and when the myocardium is relaxed, owing to organic changes. Masius[⇞] entertains the belief that the drug is unable to act as a diuretic in healthy individuals. Ball and Jennings[**] have used the medicament in the treatment of the opium habit, with the object of sustaining the heart's action. Tremors have been treated with sparteine by Potts,[††] and Evans[‡‡] has employed the drug in the treatment of angina pectoris.

Tyson reports an obstinate case of dropsy in which sparteine gave excellent results as a diuretic.[##] Solis-Cohen[‖‖] states that the remedy is useful as a cardiant diuretic, and even superior to digitalis, especially when combined with caffeine.

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[*] *Zeit. f. klin. Med.*, xii, 143, 1887.

[†] *Berl. klin. Wochen.*, xxiv, 661–666, 1887.

[‡] *Wratch*, 1887. [#] *Cent. f. d. ges. Ther.*, v, 163–174, 1887.

[‖] *Ther. Monatshefte*, 1887.

[△] *American Journal of the Medical Sciences*, xciv, 363–371, 1887.

[◊] *Gaz. Lekarska*, January 7, 14, and 21, 1888; also *Gaz. hebd. de méd.*, 1888.

[*] *Therapeutic Gazette*, January, 1888.

[†] *Journ. des sciences médicales de Lille*, February, 1888.

[‡] *Rev. génér. de clin. et de thérap.*, February 9, 1888.

[#] *Vratch*, No. 26, 1888.

[‖] *Archiv f. klin. Med.*, xlv, p. 57, 1889.

[△] *Centr. f. Ther.*, vii, 597; also *Amer. Jour. of the Med. Sciences*, 1889.

[◊] *Archiv f. klin. Med.*, March 14, 1889.

[↧] *University Medical Magazine*, January, 1889.

[↕] *Dosim. Medical Review*, May, 1891.

[⇞] *Times and Gazette*, xi, 403.

[**] *Practitioner*, xxxviii, 459; xxxix, 132.

[††] *Therapeutic Gazette*, xvi, 368.

[‡‡] *University Medical Magazine*, v, 46.

[##] *Medical News*, June 21, 1890.

[‖‖] *Ibid.*, March 13, 1893.

Quite recently Bacon [*] records a striking case of valvular disease of the heart, following inflammatory rheumatism, in which sparteine acted promptly and effectively. The author affirms to have used the same agent in two cases of mitral disease, with failing compensation and dropsy, with excellent results, and believes it to be one of the most reliable drugs at our command for the relief of such conditions. He has observed that under the action of the medicament the heart's action becomes more regular, and that the daily amount of urine is increased. The same writer reports a second case [†] of acute endocarditis complicating inflammatory rheumatism, which steadily grew worse under routine treatment. When the heart was intermittent every third beat, with great irregularity, and the radial pulse was hardly perceptible, sparteine was administered in doses of a quarter of a grain every four hours. The effects were noticed in thirty minutes after the first dose, and in two hours the increase of the cardiac force was marked. After the third dose the labored dyspnœa began to lessen and the heart was gaining force; after six hours the pulse ceased to intermit, and in twenty-four hours was nearly regular and quite strong. No ill effects were observed, the patient being a girl eleven years of age.

Though not in a very extended manner, I myself have tried sparteine in practical medicine. Here I have found the drug to act not only as an energetic heart tonic, but also as an excellent diuretic. In the former instance—that is, as a cardiac stimulant—I have employed the remedy, with most satisfactory results, in nervous palpitation, in irritable heart due to excessive use of tobacco, and in that similar condition of the viscus caused by mere muscular weakness or loss of inhibitory power.

I have observed good effects following the use of the drug not only in functional disorders of the heart, but likewise in valvular affections. In these cases, and much more particularly in those in which digitalis is contraindicated or not well borne, sparteine is highly beneficial, and not perhaps as a curative agent in most instances, but simply as a regulator of the circulation, thereby causing, at least for the time being, a more or less prolonged relief. Again, in dropsies of cardiac origin as well as in those depending on renal disease, the drug under consideration has produced as a diuretic marked results in my hands. The action of sparteine on the circulation is very decided, and it is probably due to a local increase of the arterial pressure in the organ, the result of a general action, that the drug enhances the activity of the kidney, for, so far as has been determined by experimental studies, sparteine possesses no true diuretic virtues like caffeine, for instance, which directly stimulates the renal epithelium.

In breathlessness occurring in obese persons, due probably to a fatty infiltration of the heart, as well as in the shortness of breath of anæmic patients, the employment of sparteine has been followed by decided benefit, and similar results have I observed in cases of bronchitis and in a considerable number of asthmatic individuals.

It may be said, indeed, that the range of usefulness of sparteine is not a limited one, yet the chief service rendered by the drug in the treatment of disease, not only as a substitute for more powerful medicaments belonging to the same class (like digitalis, strophanthus, adonis, convallaria, etc.), but as a prompt cardiac and renal stimulant in itself, is made manifest particularly in those conditions characterized by a weakened circulation due either to functional or to organic changes. The remedy generally relieves and sometimes cures. I have never seen disagreeable, much less poisonous, effects following the administration of the drug even when ingested in comparatively large quantities, and I may here suggest that the failure of this agent to do good in the hands of some practitioners has been, I believe, chiefly due to the fact that it has not been employed in proper doses or for a sufficient length of time. Probably, on the other hand, the quality of the drug used has been overlooked. I have administered sparteine by the mouth or subcutaneously as the *sulphate*, and in this form it has generally produced the desired effects.

I am so convinced of the stimulating action of sparteine upon the circulation that I fully concur in the opinion of Sée [*] in that this drug, as far as our knowledge goes, is superior to all other similar remedies in its ability to steady the most irregular pulse. Hence, as noticed by various observers, chiefly Pawinski,[†] Clarke,[‡] Wood,[#] and others, the usefulness of sparteine in such diseases as exophthalmic goître, in which an irregularity of the cardiac action is a prominent and often most distressing symptom. I myself have treated cases of this latter affection with most striking results, using sparteine to the exclusion of all other heart tonics.

Indeed, next to digitalis, sparteine has been, according to my experience, the most effective stimulant to the circulation, and often has given me more satisfactory results than the former remedy. Sparteine, though less powerful perhaps than digitalis, the prince of cardiac stimulants, has a very decided advantage over the latter agent in that it has no cumulative action. But to illustrate my individual experience in the therapeutic applications of sparteine, I may venture to describe, as briefly as possible, the following cases, and in so doing I will endeavor to avoid unnecessary details:

Case I. *Valvular Lesions traceable to Acute Articular Rheumatism.*—F. G., aged thirty-two years, married, no children. Family history apparently good; no syphilis. Patient suffered from infantile disorders such as measles, whooping-cough, etc. At about twenty years of age had a mild attack of typhoid fever, but made a speedy recovery. About six years previous to present illness suffered from articular rheumatism brought on by exposure to cold and dampness. When first seen by me patient had been sick for about three months. Complained of pain in joints and over præcordial region; was dyspnœic; had a temperature of 101° F. (38·3° C.), with slight remissions; pulse, 128 a minute, weak and irregular; respiration, 38; expression anxious. Physical examination revealed, on percussion, an enlarged area of dullness over the cardiac region, and on auscultation, a harsh murmur, apparently diastolic, extending over to carotids; signs of both mitral and aortic regurgitation. Albumin in urine; daily quantity of this fluid about thirty ounces (850 grammes). Insomnia. Patient was placed on a strictly milk diet, etc. Iodide of potassium, quinine, alternating with some of the coal-tar derivatives, carefully watched, were given. No improvement in the course of a month. Patient was then put on the *sulphate of sparteine* exclusively, in doses of a quarter of a grain (0·015 gramme) three times a day. No marked changes occurred in a week. I then increased the dose to half a grain (0·03 gramme) three times a day and resumed the potassium salt. Improvement soon followed. By the end of another week the pulse was steady and strong—98 a minute; respiration, 22; the flow of urine was increased, the fluid measuring from sixty to eighty ounces (1,700 to 2,265 grammes) a day, with a notable diminution in the amount of albumin; bodily temperature, 99° F. (37·2° C.). Patient slept better. The same treatment was continued, and in about a month longer the bodily temperature had regained its normal standard; pain in the joints was almost gone; pulse, 85; respiration, 20; urine free from albumin, and nearly a hundred and seventy ounces (4,815 grammes) in amount in the twenty-four hours; præcordial distress absent. Discharged patient, and in two months he reported himself as still in a comfortable condition, with good appetite, and able to take light exercise in the open air.

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[*] *American Therapist*, October, 1893.

[†] *Ibid*, April, 1894.

[*] *Loc. cit.*

[†] *Loc. cit.*

[‡] *Loc. cit.*

[#] *Therapeutics; its Principles and Practice.* Eighth edition, 1891

CASE II. *Cardiac Dilatation with Lack of Compensation.*—G. V. G., aged fifty-two years, farmer, with good family history. Patient had for some years complained of shortness of breath after slight exertion. Had been advised to stop all physical work. The man was suffering from a chronic mitral lesion. During an attack of influenza his old heart trouble had been much aggravated, but under proper treatment and good nursing he had entered into convalescence from the grippal disease. One afternoon, shortly after partaking of a good meal, the patient became suddenly faint, with a sense of distress over the præcordia, dyspnœa, and a feeling of approaching dissolution. In the course of a few days bronchitis supervened, followed soon afterward by general œdema. When first seen this symptomatology was noticed: Marked cyanosis of the skin; general œdema, pulsation of jugular veins; regurgitant murmurs in mitral and tricuspid regions; intense dyspnœa; pulse feeble, irregular, and rapid, about 140 a minute; respiration, 42; urine scanty and albuminous; insomnia. Diagnosis being apparently clear, patient was given digitalis; but this remedy seemed to aggravate the condition, and was therefore immediately substituted with sparteine in doses of half a grain (0·03 gramme) every three hours. After the fourth dose the patient felt intense relief, his breathing became regular and easy, only 28 a minute; pulse steady, full, and strong, 92 a minute; there was a good flow of urine. The remedy was kept up in doses of half a grain (0·03 gramme) every three hours, and in the course of three weeks, with a gradual improvement of the respiration and the circulation and the renal function, the œdema, the cyanosis, and even the bronchial trouble had practically disappeared. The sparteine was gradually diminished in amount, and the patient continued to do well for a couple of months longer. One day, while attempting to walk upstairs in a hurry, he fell over and in a few minutes died. No autopsy was allowed.

CASE III. *Chorea associated with Endocarditis.*—Y. L. M., aged ten years. Patient rheumatic; family history uncertain, but probably also rheumatic. The boy had had scarlatina and measles when quite young, and had suffered from chorea for the last six years. While apparently in good health (except his choreic trouble, for which he had never been treated), after exposure to cold and dampness, he developed a bodily temperature of 105·8° F. (41° C.), accompanied with intense headache and marked dyspnœic symptoms; coated tongue, thirst excessive, and profuse perspiration. Examination showed almost entire absence of cardiac impulse; præcordial pain; weak, irregular, and compressible pulse, 138 a minute; respiration, 42; cyanotic condition of surface of the body; constipation; scanty secretion of urine. On Monday, after moving his bowels with a gentle laxative, patient was put on quinine and salicylates. Wednesday, no apparent improvement as yet; temperature, 102·2° F. (39° C.); respiration, 40 a minute; pulse, 142 a minute and growing weaker and more irregular, sometimes distinctly intermittent; secretion of urine about the same as before. Suspended the quinine, but continued the salicylates. Saturday, a slight improvement was noticed, but the pulse was exceedingly weak and alarmingly rapid, 150 a minute; respiration, 44; temperature, 100·6° F. (38·1° C.); dyspnœa distressing. The salicylates were now discontinued also and the patient was put on sparteine sulphate, a quarter of a grain (0·015 gramme) every three hours. After the third dose the dyspnœa became better. On the next day I found decided improvement; patient had passed a good night, and was now breathing a great deal easier; respiration, 32; pulse stronger and more regular, 104 a minute. An increased flow of urine was noticed by attendants, but the quantity was not ascertained. Continued the administration of sparteine in doses of a quarter of a grain (0·015 gramme) three times a day. There was a gradual but decided amelioration, and four days afterward the bodily temperature was about normal; appetite very good; sleep at night also very good; pulse quite strong now, full, and regular, 98 a minute; respiration, 28 a minute; kidneys very active. In a week longer the patient got out of bed. Suspended the sparteine and put him on a tonic. Several days later the pulse became faster and somewhat irregular, and the patient was given sparteine once more for another week, with the same good results. The effects on the general circulation, particularly the heart, and on the kidneys were distinctly beneficial.

CASE IV. *Exophthalmic Goître.*—Miss J. del C., aged seventeen years, of a lymphatic temperament; anæmic. Family history good. Menstruated at fifteen, but periods irregular and scanty. Had been suffering from present disease for several months and had been treated unsuccessfully by able physicians with various medicaments and even with electricity. Now she was also troubled with distressing palpitations, dyspnœa, and fainting spells; blushed and perspired under the slightest provocation; digestion bad; bowels, though not constipated, very irregular; insomnia; great nervous depression, with suicidal tendencies. Patient weighed ninety-two pounds. Physical examination showed systolic murmur over the apex; heart sounds feeble. The typical signs of exophthalmic goître were marked, especially the rapidity of the heart's action, the organ beating from 158 to 170 a minute; prominence of eyeballs and enlarged thyreoid glands, with distinct throbbings of both carotids; respiration, 38 a minute. I learned that she had taken alternately digitalis, strophanthus, and belladonna, but, as mentioned, with negative results. Without further ado, the patient was put to bed and subjected to a strictly liquid diet, especially of milk. Sparteine sulphate, in doses of half a grain (0·03 gramme) every four hours, was administered at first. After two days the patient felt somewhat but not much better; pulse still weak and irregular, about 162; respiration, 34. She was now passing from twenty-eight to thirty ounces (718 to 855 grammes) in the course of the day. Increased the sparteine to half a grain (0·03 gramme) every three hours on Tuesday morning. On Thursday I found decided changes; breathing more easy, 26 respirations a minute; pulse fuller and stronger, 128 a minute; urine had increased to thirty-eight ounces (1,080 grammes) a day. Friday—pulse, 102; respiration, 24; no dyspnœa; amount of urine in the course of the day, forty-eight ounces (1,370 grammes); appetite much better and sleep more refreshing; patient more cheerful, with a desire to get out of bed. A week later, the change in the patient's condition was remarkable. Both respiration and pulse apparently normal; the former, 22; the latter strong, fuller still, and only 88 a minute; amount of urine now varied from fifty to seventy ounces (1,925 to 1,995 grammes) a day, the fluid being practically normal; no albumin; acid reaction; specific gravity, 1·022. The thyreoid gland was distinctly lessened in size, and the prominence of the eyeballs had apparently disappeared. Appetite almost ravenous; condition of the bowels practically faultless. The patient had become extremely cheerful and, to use her own words, "felt all over like a new person." She was allowed now to get out of bed and instructed to do light bodily exercise. The drug was suspended for several days, during which time the patient did not feel very well; but she continued to improve on the readministration of the medicament, which was ordered in doses of a quarter of a grain (0·015 gramme) three times a day. In the course of about four months the ninety-two-pound girl made the scale mark one hundred and twenty pounds. I lost track of the patient shortly afterward, but two years later I heard that she had been married and become a happy mother.

I do not think it is necessary for me to detail other cases of disease characterized by circulatory changes, and in which sparteine has, in my hands, rendered signal service. The cases I have given fairly represent the main results obtained by me with this valuable drug, destined, if not entirely to replace digitalis, at least to rival it in the treatment of heart affections, or in that of other maladies complicated with serious cardiac disturbances. As already stated, my own experience corroborates also that of other observers in regard to the diuretic properties of the drug under consideration. I could cite several cases of cardiac and renal dropsies in which sparteine, used from the start, gave excellent results as a diuretic, and still other cases that have been greatly benefited by this remedy, cases in which medicinal agents like digitalis, strophanthus, and others of the same class, tried first, had failed to do any good. But I desire to reproduce here, instead of any number of my own cases, two that have been kindly furnished me by Professor James Tyson, of Philadelphia, illustrating in a striking manner the diuretic properties of sparteine. In this connection I wish to thank my distinguished former teacher for his valuable assistance. Professor Tyson's cases are as follows:

Case V. *Chronic Parenchymatous Nephritis.*—Mrs. L., aged twenty-three years, was admitted to my wards in the Hospital of the University of Pennsylvania, August 23, 1893. She presented all the symptoms of chronic parenchymatous nephritis—dropsy, pallor, large albuminuria, numerous dark granular casts; also pale granular casts, and many compound granule cells. She was treated with caffeine citrate, digitalis, and sparteine at different times with varying results, all remedies being more or less efficient. With a view, however, to systematically testing the sparteine she was put on the drug after a suitable interval had elapsed, in doses of a quarter of a grain every two hours, on February 18, 1894. During the twenty-four hours previous the secretion of urine had been thirty ounces, and had ranged from a minimum of twenty-nine ounces to a maximum of thirty-eight ounces a day for eleven days preceding. On the 19th, the twenty-four hours' secretion was forty ounces; on the 20th, sixty-four ounces; on the 21st, fifty-nine ounces; on the 22d, seventy-five ounces; on the 23d, sixty ounces. For three days there appear to have been no measurements, when, on the 26th, the twenty-four hours' secretion was fifty-four ounces; on the 27th, fifty-seven ounces; on the 28th, sixty ounces; on the 1st of March, seventy ounces; on the 2d, seventy-seven ounces; on the 3d, seventy-nine ounces; on the 4th, eighty-four ounces; on the 5th, eighty-six ounces; on the 6th, seventy-eight ounces; on the 7th, seventy-nine ounces; on the 8th, ninety-eight ounces; on the 9th, ninety-six ounces; on the 10th, eighty-eight ounces; on the 11th, ninety-four ounces; on the 12th, ninety-three ounces; on the 13th, eighty ounces. On the 13th of March the sparteine was omitted, and on the 14th the urine had fallen to seventy ounces; on the 15th, to sixty ounces; on the 16th, to fifty-nine ounces; on the 17th the urine was again seventy-two ounces; on the 18th, seventy-nine ounces; and on the 19th it was once more only sixty-five ounces; on the 20th, sixty-two ounces; on the 21st, thirty-nine ounces. On the 22d the urine had arisen to sixty-nine ounces, but on the 23d it again fell to fifty-eight ounces. Thus it will be seen there was a direct relation between the administration of the sparteine and the secretion of urine, the latter increasing when the former was exhibited, and falling when it was discontinued.

Case VI. *Albuminuria.*—Dr. W. R. B., aged thirty-four years. Three years ago—that is, about January, 1891—albumin was discovered by a medical examiner for a life insurance company, having been previously unsuspected. No other symptoms appeared until about a year ago, when the patient began to have a little shortness of breath on exertion. In the summer of 1893 he went to Omaha to practice medicine, but found on arriving there that he could not sleep. He therefore returned to Philadelphia early in August and began to practice there. Soon after this, however, he had a convulsion, but recovered, and improved greatly for a time under the care of Dr. Robinson, of Camden, N. J. He again grew worse and sent for me on January 11, 1894. I found him gasping for breath, begging for something to make him sleep. His heart was exceedingly feeble, pulse scarcely perceptible at the wrist, but there was no murmur. On examining his urine I found a very large albuminuria, equaling three fourths of the bulk of the urine tested. There was also a large number of casts, hyaline and dark granular, with compound granules also free and adherent to casts. Sleep was obtained by chloral at first, but later morphine became necessary. He was put on the use of strychnine, with caffeine citrate at first, then digitalis, until the effect of these remedies ceased to be obtained. In the meantime the dropsy continued to increase until the skin of his legs burst, and there was constant weeping of serum, while there was also a large abdominal effusion. Sparteine sulphate was commenced on the 20th of February, when he was passing but a few ounces of urine and the dropsy was extreme. On the 23d four half-grain doses of sparteine were taken and the twenty-four hours' urine amounted to one hundred and three fluidounces. On the 24th, with three doses, the twenty-four hours' urine equaled seventy-nine ounces; on the 25th, with four doses, sixty-one ounces; on the 26th, with three doses, seventy-nine ounces; on the 27th, with three doses, fifty-eight ounces; on the 28th, with one dose, forty-three ounces; on March 1st, with four doses, forty-nine ounces; on the 2d, with four doses, eighty-nine ounces; on the 3d, with three doses, forty-six ounces; on the 4th, with four doses, eighty-three ounces; on the 5th, with two doses, fifty-four ounces. On March 6th no sparteine was given, and the twenty-four hours' urine fell to thirty-two ounces. On the 7th, with four doses, the amount of urine in the twenty-four hours was sixty-four ounces; on the 8th, with one dose, sixty-eight ounces; on the 9th, with one dose, forty-eight ounces; on the 10th, with three doses, eighty-two ounces; on the 11th, with three doses, sixty-four ounces. On the 12th no sparteine was given, and the urine fell to thirty-eight ounces. On this day a small abscess in the leg was opened, which was recognized after the œdema had disappeared. By this time also the abdominal effusion had likewise disappeared. On the 13th no sparteine was administered, and the twenty-four hours' urine only measured twenty-six ounces; on the 14th, no sparteine, with the same result—that is, only twenty-six ounces of urine. On the 15th, the urine having fallen rapidly, sparteine was recommenced; two doses were given with only eighteen ounces in the twenty-four hours. On the 16th, with three doses, twenty-nine ounces; on the 17th, with three doses, twenty-six ounces; on the 18th, with six doses, twenty-seven ounces; on the 19th, with four doses, fourteen ounces. It was now concluded that sparteine had lost its effect, and digitalis was substituted in doses of fifteen minims every four hours. Simultaneously with the marked reduction in the amount of urine it was remarked that the shortness of breath returned in a troublesome way. At the end of the twenty-four hours after the digitalis was commenced the urine had attained fifty-one ounces. At the end of the next twenty-four hours, terminating at five o'clock on March 22d, with three doses of digitalis, the urine was sixty-eight ounces.

The results obtained in these two highly interesting cases speak for themselves. Dr. Tyson, whose authority in kidney disease is recognized the world over, is a firm believer in the diuretic properties of the drug. Referring to the two cases just described, he writes me as follows:

> "I give you these cases without comment; but you will be able to see a markedly direct relation between the administration of the drug and the secretion of urine, notably increased with its exhibition and diminished with its withdrawal, although in Mrs. L.'s case, after the last withdrawal of the drug, the secretion fell to a less degree. I take it that when this happens the kidney is resuming its function. In the doctor's case, however, there followed not only a fall, but also a failure finally to respond, while the substitution of digitalis was promptly followed by an increase. It is, of course, necessary for the drug to have something to work on—that is, there must be fluid in the tissues or in some one of the serous cavities. In one instance I gave it to a young woman with astonishingly scanty secretion of urine, but no dropsy, but it was apparently without effect. Here, after a time, the freer ingestion of water was followed by a corresponding secretion. From the clinical aspect I am inclined to place it after digitalis, although I am not quite certain of this. You will note that I give larger doses than are recommended in the books—say, a quarter of a grain every two hours, or half a grain every four."

I need only add that I entirely agree with the views expressed by Dr. Tyson. There is scarcely any doubt but that sparteine, to exercise its diuretic action to better advantage, requires a suitable field. I myself, for experimental purposes, have taken the remedy with evidently negative results as regards an increase in the amount of urine secreted.

The same Dr. Tyson[*] reported not very long ago a case of albuminuria occurring in a man forty-three years of age, in which the effects of sparteine as a diuretic were so striking that I will quote a portion of the details of the case. The author states:

> "He was passing about forty ounces of urine. . . . I now (September 8th) added to this treatment sparteine, in doses of half a grain three times a day. It will be remembered that this drug had previously been given without effect, not, however, in connection with an exclusive milk diet, which was continued in the quantity of about forty-two ounces daily. It again appeared without effect, and on the 14th was substituted by the infusion of digitalis. The quantity of urine ranged from thirty-two ounces to forty-four until the 25th, when it rose to fifty-five ounces, and continued to rise with fluctuations until sixty-nine ounces were reached. Then there was some diminution, but the quantity continued free until about the 1st of November, when it began to decline until November 15th, when but twenty ounces were passed. Sparteine was again resorted to, and at once the urine rose rapidly and remarkably. Thus on the 16th there were twenty ounces; on the 17th, thirty-three; on the 18th, forty; on the 19th, fifty; on the 20th, seventy; on the 21st, one hundred and twenty-eight; on the 22d, one hundred and sixty-nine; on the 23d, one hundred and fifty-five; on the 24th, one hundred and fourteen; on the 25th, one hundred and forty-eight; on the 26th, one hundred and forty-nine. On the 26th the drug was discontinued, when at once there began a fall, the quantity being, however, still free."

Of the large number of prominent practitioners to whom I wrote requesting them to furnish me with their individual experience in the use of sparteine, the majority of them had little or nothing to say in regard to the matter, owing to their having employed the medicament to a limited extent or not at all. Those who have had some clinical experience with the drug kindly reported their observations to me, and I take pleasure in inserting their replies. I wish to thank all these gentlemen for their courtesy.

Dr. William Osler, of Baltimore: "I rarely now use sparteine. Some years ago I tried it in a series of cases of failure of compensation, and usually had to resort to digitalis. It has been in my hands very much inferior to either digitalis or strophanthus. I still occasionally order it when from any cause digitalis is not well borne and strophanthus fails."

Dr. Wharton Sinkler, of Philadelphia: "I have used sparteine in several cases of kidney disease where there was considerable suppression of urine, and was under the impression that its diuretic effect was decided. In one case which I recall I gave it hypodermically in doses of half a grain every four hours, and there was a marked increase in the amount of urine passed; but I did not observe any appreciable influence upon the pulse; in fact, there could be no fair test made of its action upon the heart, as I was giving strychnine at the same time."

Dr. J. M. Anders, of Philadelphia: "(*a*) *In Acute Renal Affections.*—In acute Bright's disease or acute nephritis with dropsy, it aggravates the local symptoms during the acute or febrile stage; but, after the acute stage is over, its use is followed by polyuria and rapid subsidence of the dropsical swelling. In these cases the commencing dose should be small (an eighth of a grain every four hours), gradually increasing to half a grain. In such instances I have found it to be a powerful diuretic. (*b*) *In chronic nephritis* (parenchymatous), with dropsy, its employment has not, in my hands, been followed by striking results. It is better to excite first vicarious elimination through the skin and bowels; then sparteine sulphate, in combination with strychnine sulphate and digitalis, may be employed at intervals, with marked increase in the volume of urine, without unpleasant effects. It is, in my opinion, based on practical observation, a feeble cardiac stimulant and tonic. (*c*) *Organic Disease of the Heart.*—I have notes of some dozen cases of organic valvular disease in which the remedy gave good results, though always most beneficial when combined with a powerful cardiac tonic, as digitalis. The cardiac dilatation is not improved by sparteine alone, whereas it is by digitalis; but the diuretic action of the latter drug is augmented by the use of the former in most cases. To overcome arrhythmia it is not as efficient as strophanthus and digitalis in combination, though it has some effect in this condition. In exophthalmic goître I have had a limited experience with the drug, and, on the whole, favorable. How best to administer it in this latter disease I do not know precisely. It must, however, have an influence upon the vaso-motor nerves."

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[*] *Loc. cit.*

Dr. John V. Shoemaker, of Philadelphia: "I have found this remedy useful as a cardiac and renal stimulant. The cases in which I have employed it have been relieved or benefited according to the nature and stage of the disease. It possesses a decided advantage over digitalis in being free from a cumulative action. Although it has been denied that digitalis exerts such an influence, I am satisfied from my observations that, in certain instances, an effect due to accumulation does occur when digitalis has been administered steadily. After a patient has taken sparteine for several weeks it may be discontinued for several days, during which time it will be found that its characteristic effects are maintained. These properties render it extremely valuable for prolonged administration in chronic cases. I have given sulphate of sparteine with advantage in cases of enfeebled cardiac action from organic lesions, and also where the innervation of the organ was markedly disturbed. It is especially beneficial in disease of the mitral valve. In advanced stages of this condition, when dilatation has begun, when the ankles become œdematous, respiration embarrassed, and the kidneys inactive, I have witnessed marked relief follow the exhibition of sparteine. The action of the heart has become more steady and forcible, an augmented flow of urine has taken place, and the dropsy has lessened. Sparteine is of service in cases of dyspnœa, palpitation, and cardiac debility arising from an excessive deposit of fat around the heart. This is a frequent occurrence in obese individuals, and may be associated with actual fatty degeneration. These patients are subject, after moderate exertion, or in consequence of digestive disturbance, to paroxysms of breathlessness and palpitation, which are very distressing and which excite great alarm in the subject of the attack. Speedy relief follows the use of sparteine in such cases. In dilatation from valvular disease I often give the remedy hypodermically. Good results follow the use of this remedy in functional diseases of the heart caused by excessive bodily or mental labor, anxiety, etc. It has proved useful likewise in the treatment of tobacco heart. As sparteine increases the elimination of urea, it is beneficial in chronic parenchymatous nephritis, being efficient in reducing the dropsical effusions and in preventing the accumulation of urea in the blood. I have frequently, in such cases, maintained the use of sparteine systematically for a considerable period with decided benefit, and without witnessing any ill effects upon the digestive functions. In short, I consider the sulphate of sparteine an excellent drug in any form of œdema of cardiac or renal origin."

Dr. Roland G. Curtin, of Philadelphia: "It has the effect of increasing vascular tension, which makes it inapplicable in degenerative weakness of the cardiac walls; it is also injurious in obstructive pulmonary diseases—such as pneumonia, hypostatic congestion, etc. It is not as good a diuretic as digitalis or strophanthus or caffeine and some other cardiac tonics. In some cases it seems to act as a diuretic, other times no such action is noticed, and still even frequently it diminishes the quantity of urine. It is rather slow in its action and the effects are rather evanescent, requiring more frequent dosage than some of the tonic medicines usually used for the heart. It can be used hypodermically better than some other like remedies. It is usually well borne by the stomach, better so than digitalis or strophanthus. Eichhorst says that sparteine sulphate stands low in the list of heart tonics, and that it seems particularly applicable in cases of cardiac asthma."

Dr. John E. Bacon, of Sumner, Wash.: "I have used sparteine sulphate in a number of cases of functional cardiac disturbances from overuse of tobacco, with the utmost satisfaction, the drug producing a firm, regular contraction after a few doses of a fourth of a grain each, and invariably slowing the normal number of pulsations per minute. I have used the drug in but two extraordinary cases. From clinical observations and from some experiments that I have been conducting, I believe sparteine to be superior to any drug in common use as a prompt stimulant."

From the foregoing clinical evidence it is seen, then, that sparteine is a medicament of considerable power as a cardiac and renal stimulant, second only, it appears, to digitalis. It is adduced also that sparteine possesses the peculiar advantage of not exerting a cumulative action, although one observer, Bruen,[*] believes that it has such an action.

I think it would be unnecessary for me to offer any explanations as to the manner in which the drug under consideration acts in the diseased conditions mentioned. Its direct physiological influence on the heart, and its power to enhance the activity of the kidney as a result of the general increase of the blood-pressure produced by the agent, are sufficiently clear.

Sparteine does not produce, as a general rule, any alarming ill after-effects. In all the literature at my command I have found recorded only a few cases of poisoning caused by the drug. One case[†] was that of an old woman who, after taking a decoction of the tops and seeds of scoparius, vomited and sweated profusely, staggered, and suffered from disturbance of vision. Another case is reported by Prior[‡] in which, after a dose of thirty grains, arrhythmic action of the heart, nausea, giddiness, and a sense of weight in the limbs, were noticed. A third case is published by Bruen,[#] who observed paresis, amounting to paralysis, following the use of the remedy. It is true, again, that Legris, quoted by Wood,[‖] states that headache, vertigo, palpitations, and tingling in the lower extremities were observed after large doses, and that Garand[△] affirms to have noticed loss of motor power in the lower extremities, redness of the face, and cardiac pain, following the ingestion of the drug. All these symptoms, however, have not been necessarily alarming, much less fatal.

The medicament is perhaps best given by itself, though it may be advisable sometimes to administer it in combination with other remedies. In this connection it may be well to bear in mind the idea of incompatibility. I find that Julliard[◊] calls attention to the fact that sparteine and iodide of sodium are incompatible.

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[*] *Loc. cit.*

[†] *Lancet*, p. 668, October, 1884; also quoted in *Nation. Dispens.*, 1894.

[‡] *Edinb. Medical Journal*, xxxiii, 567.

[#] *Loc. cit.*

[‖] *Loc. cit.*

[△] *Thèse* 218, Lyon, 1886.

[◊] *Journ. de méd., de chirurg. et de pharmacologie*, July 20, 1891.

Another important point is that of dosage. In this matter authors differ materially. Thus Sée puts down the dose of sparteine as two grains (0·13 gramme) a day; Prior, from a sixth to a third of a grain (0·01 to 0·02 gramme) several times a day; Clarke gave it in amounts of a sixteenth of a grain (0·004 gramme) every four hours, and increased it to twelve grains (0·78 gramme) a day without causing toxic effects. Gluzinski recommends the remedy in doses of from a third to three quarters of a grain (0·02 to 0·04 gramme), while Levaschew has given it in from a grain and a half to four grains and a half (0·09 to 0·29 gramme) three or four times a day. As has been noticed, Tyson employs it also in comparatively large quantities—that is, a fourth of a grain (0·015 gramme) every two hours, or half a grain (0·03 gramme) every four hours. I myself have given sparteine in as high doses as half a grain (0·03 gramme) every three hours. I believe in this energetic method of administration. There is no doubt that large quantities must be used in order to insure the good effects of sparteine; small doses generally lead to disappointment.

1320 Avenue E.

REMOVAL OF A NASO-PHARYNGEAL TUMOR BY THE GALVANO-CAUTERY ÉCRASEUR.

WITH EXHIBITION OF CASES.[*]

By R. P. LINCOLN, M. D.

Through the invitation of your chairman, I have an opportunity to demonstrate by a case now under treatment a method for the removal of naso-pharyngeal tumors first essayed by myself about twenty years ago. Fortunately, by the great and much-appreciated courtesy of another patient, I am enabled to introduce to you the subject of the first of these cases published by me and operated upon in 1875. Both can be examined after the reading of the paper. The striking correspondence of these two cases, the first and last of a considerable series of a disease comparatively rare, is most unique. The detailed description as published of the first at the time of its removal would serve for an accurate account of the last when, January 12, 1894, the operation was made:

Mr. C. P. B., Jr., aged nineteen years, consulted me in July, 1893, accompanied by his family physician, Dr. Hedges. He complained of headache and obstructed nasal respiration on the left side, which was first noticed in September, 1892. There was also pain in the left eye.

On inspection, the left side of his face was fuller than the right, and the eye of this side apparently more prominent. On examining the interior of the left nostril, an obstruction could be made out about three inches from the tip of the nose, hæmorrhage from which was started when delicately touched by a probe. Air could not be forced outward through this nostril, but by a strong effort it could be drawn in through it. On the right side nothing abnormal was discoverable; ingress and egress of air could here be made with a slight effort.

Posteriorly, the mirror disclosed and the finger detected a tumor attached to the vault of the pharynx, principally on its left portion over the upper part of the pterygoid process forward into the left posterior naris. It was elastic to the touch and of a pale purplish color.

The fullness of the left cheek was caused by the presence of an abnormal body near the mucous membrane and prolonged from behind the anterior portion of the zygomatic arch. It was elastic and its dependent portion movable when seized between the fingers, one grasping inside the cheek and the others outside, and susceptible of being crowded upward.

It was doubtless a prolongation from the main body of the tumor at its attachment to the body of the sphenoid, extending through the spheno-palatine foramen. That was my judgment in the first case I reported. Nélaton reports a similar complication in a patient operated on by him.

I advised immediate removal by means of the galvano-cautery écraseur, and subsequent repeated cauterization of the stump by the galvano-cautery and electrolysis. Arrangements for a journey around the world had already been made, and the patient's friends decided not to abandon it. Six months afterward the patient again presented himself, mentally happy in the recollection of his coveted trip, but depressed at the contemplation of the growth of his cruel enemy. The tumor had quadrupled in size and all its symptoms increased proportionately. There was no longer any nasal breathing. A profuse muco-purulent discharge flowed from both nostrils. The lower portion of the tumor could now be seen extending a little below the free border of the soft palate and distending it; it was eroded and often bled. The prominence of the left cheek had increased so that its mucous membrane was often pushed between the upper and lower sets of teeth and bitten.

The general physical condition was fair, so that on January 12th I carried out the operation in detail as previously described.[*]

In the presence of Dr. Goodwillie, Dr. Miller, and Dr. George Wright I operated at St. Elizabeth's Hospital. The paient being etherized, a double electrode, armed with a looped irido-platinum wire, was passed through the left nostril, the loop being carried into the mouth and behind the tumor up to its attachment.

The connections to the battery being properly made, the tumor was divided at its base in a few seconds, and removed through the mouth with little hæmorrhage.

Every symptom of obstruction was at once relieved and remains unimpaired.

I offer for your inspection the tumor, though much shrunken by having been kept in alcohol.

I am indebted to Dr. Eugene Hodenpyl for a report of the microscopical appearance of the specimen concurred in by Dr. Prudden: "It is composed of rather loose fibrous tissue in which are found a very large number of larger and smaller blood-vessels. The diagnosis is, therefore, vascular fibroma."

The patient made a very quick recovery from the effects of the operation and was able to resume his studies about a month later.

The tumor that presented in the cheek has already somewhat lessened in size. This manifestation deserves further consideration. It is a most interesting and important question whether the experience of the first case—its complete disappearance by atrophy—will be again repeated in this last. The present indications are that our hopes will be realized.

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[*] Read before the Section in Laryngology of the New York Academy of Medicine, March 28, 1894.

[*] *Trans. of the American Laryngological Association, 1879.*

I have only made one cauterization of the stump, because pain in the left eye was much increased in consequence.

It is proper here to state that pain in the eyes long antedated naso-pharyngeal symptoms and was aggravated by study. The increase of this distress led me to request a renewed examination and report by Dr. J. B. Emerson, the oculist, who has for a long time directed their treatment. I quote the result of his tests: "The fundus of the eye is normal; there is no limitation of movement of eyeball; slight exophthalmus, but nothing detected to indicate a growth in the orbit; there is no explanation of the pain in the eye except that it is reflex or due to astigmatism; has mixed astigmatism." This report was of an examination made the 13th inst. and confirmed yesterday.

Dr. H. D. Noyes also examined the patient yesterday, reaching substantially the same conclusions.*

THE PRACTICAL WORKINGS OF THE NEW LAWS FOR THE STATE CARE OF THE INSANE.

By CARLOS F. MacDONALD, M. D.,

PRESIDENT OF THE NEW YORK STATE COMMISSION IN LUNACY;
PROFESSOR OF MENTAL DISEASES IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE;
LATE LECTURER ON INSANITY IN THE ALBANY MEDICAL COLLEGE.

(*Concluded from page 621.*)

UNDER the head of occupation, Superintendent Andrews reports: "During the year we have increased the facilities for the employment of patients by fitting up a general workshop in which are now concentrated the industries of the hospital: as the tailor and shoe shop, the making of brooms and brushes, the picking of hair and manufacturing of mattresses, the reseating of chairs, and upholstering. . . . All of the clothing for patients is made in the institution, and at less prices than were paid to the prisons for inferior articles. The shoemaker, by the assistance of patients, makes all of the shoes and slippers used by the men and women patients at a reduced cost."

In another part of this report Dr. Andrews states: "*During the year we are able to report progress in the improved care given to patients. They have been better fed, better clothed, and made more comfortable and contented.* These results have been attained by the increased productiveness of the farm and garden, and by the manufacture of shoes and clothing to the measure of the individual patient, and by a more thorough individualization in treatment. Employment adapted to the ability of the patient and night attendance upon a larger number of the wards have lessened the amount of sleeping remedies given and decreased the noise, violence, and destructiveness both by day and night.

"The change from the former condition is particularly noticeable on the disturbed wards, even to the casual observer, and much more so to those interested in the management. . . . The State Commissioners in Lunacy have made the visits required by law and inspected the conduct of the hospital in all of its departments. They also gave a hearing to all of the patients who desired it and made suggestions looking to the improvement of the service."

The superintendent of the Buffalo State Hospital, in his report for 1893, says: "There have been such changes in the treatment of insanity as have revolutionized our institutions and added immeasurably to the comfort of their inmates. These are epitomized in the change of designation, now so common, from asylum to hospital. All the institutions, by whatever name called, are conducted as places for the care and cure of the sick, rather than for mere retention of the insane.

"The improvement in construction consists in the erection of hospital and infirmary wards where the sick and helpless can receive the care demanded for their condition; the building of amusement halls, of chapels detached from the main structures, of work rooms for the employment of patients; of associate dormitories and dining rooms, of homes for convalescents; cottages for farm hands, colonies, and lastly, as comprehending these various structures, the cottage plan system. All of these changes from the former conventional plan of institutions indicate readiness to adopt such new ideas as give promise of better care of patients." And again: "The increase in the number of physicians and attendants employed in the care of patients, and the higher qualifications required by civil-service examinations, and by the establishment of training schools in most of the State institutions are elements of progress of paramount importance in the conduct of asylums. . . . The extension of night service rendered possible by the erection of large associate dormitories, and by the increase in the number and the better training of nurses, has had the effect to reduce suicides and escapes, to correct the personal habits of the insane, and to remove many of the unpleasant features in their care. The wider range of employment and occupation which is now granted and urged upon our patients is a most potent factor in their treatment. The systematic use of amusements and recreation and the greater liberty allowed to patients must not be overlooked in recounting the forward movement of practical progress. . . . This condensed summary of progress in the construction and administration of hospitals for the insane points to the fact that the real bases of improvement have been, in the main, in the direction of individualization of treatment and in the greater confidence in patients and liberty granted to them. The whole history of the cure of the insane is a striking commentary on the advance of the world in civilization and humanity. . . . We are glad to report an advance in this direction by the action taken by the Commission in Lunacy in the State of New York, who recently issued a circular authorizing the managers of State hospitals to permit the introduction of students under proper restrictions to the wards of the various institutions. This furnished an opportunity for all the colleges to give to their students long-desired instruction upon this subject. Favorable action was taken by the managers of the Buffalo State Hospital, and during the winter months clinical instruction was given on the wards to the students of both of the medical colleges of the city. This is a step of progress which it gives me great pleasure to report."

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* During the discussion that followed, Dr. Noyes stated that his opinion, expressed in a letter twenty-four hours before, had been modified, and that his present judgment was that a tumor had intruded into the orbit and that its pressure on the eyeball gave rise to certain ocular symptoms.

The superintendent of the Utica State Hospital, in his report for 1892, in speaking of the new buildings erected under the State Care Act, says: "One can not commend too highly this new provision for the feeble, demented insane of the chronic class. Associated as they are in large, lofty, airy day rooms and dormitories, with structural arrangements and conveniences adapted to their helpless condition, it is now possible to care for them with a minimum of inconvenience and the maximum of efficiency. . . . The infirmary has a separate day and night service. The work of the day attendants is taken up by those of the night, and pursued with the same careful regard to conditions of cleanliness, so that good habits have been created even in cases where the attempt at rescue from degradation seemed almost hopeless. As a concrete example of what has been done under the new *régime*, I may mention the striking fact that where formerly in the main building half of the number of women patients of the same class soiled as many as seventy-five sheets per night, the number reported in the new building for women has frequently been naught."

This same report under the head of occupation says: "At the risk of appearing a faddist on the subject of occupation, I venture to say that in no respect has the general weal of our patients been more manifestly promoted than by the increased avenues of employment that have been thrown open to them." This report concludes with the following striking paragraph:

"*We approach the new year with better facilities for the care of the insane than have ever before been ours. Ours will be the fault if we do not to the utmost avail ourselves of our opportunities to fulfill the promise and discover the potency of the epoch-making enactment of 1890.*"

The report of the superintendent of this same hospital for 1893 says: "The general health of the house has been good, and one may in reason claim that, on the whole, our people have been comfortably housed, fed, nursed, and clothed. As regards creature comforts generally they have by no means fared ill."

And again, in referring to the improvements and betterments made to the buildings during the year: "All this new work of which you (the managers) make mention in your report will vastly add to our facilities for carrying out the objects of the institution and promoting its efficiency."

The managers of the St. Lawrence State Hospital in their report for 1893 state: "This hospital presents a history of steady and unchecked growth since its creation by statute, and the past year contrasts favorably with previous ones in this respect." The superintendent of this hospital, in his report for the same year, referring to the completion of a new group of buildings, says: "It stands now an ideal asylum building for the care of four hundred insane women of the class not strictly requiring active hospital treatment or infirmary care. There can be no doubt that it will fulfill its purpose in an admirable manner."

The superintendent of the Hudson River State Hospital in his annual report for 1893, in reference to increasing the capacity of the building by utilizing the sitting rooms as dormitories, says: "The use of the three sitting rooms as dormitories has worked no hardship to the patients, as there is ample day space in the large corridors and double alcoves. In fact, the change has resulted in an improvement in the appearance of the corridors, for they have been made more cheerful by the addition of furniture and pictures. But the greatest advantage has been in the improvement in the night care of the helpless and filthy, which is made practicable by the fact that the new dormitories are in close proximity to the water section. The use of the objectionable chamber vessel is avoided and habits of cleanliness are cultivated by the regular and systematic attendance of the night nurses, which only such an arrangement can make possible. . . . *Thus without undue crowding the permanent capacity of the hospital has been increased by three hundred and two beds.* A building to accommodate a like number under the State care allowance would have cost the sum of $166,000. The relief which was thus obtained was very great, and was appreciated by officers, nurses, and patients. . . . The pictures and furniture purchased during the past year have added greatly to the appearance of some of the wards; but we have only made a beginning and can not keep on without more funds." And again: "The several members of the State Commission in Lunacy have made frequent official visits during the past six months, and I am indebted to them for many practical suggestions in regard to the details of hospital management. Their visits and inspections are a spur to every medical officer and to the nurses as well. When it is remembered that they are constantly going from one hospital to another, gathering the best points in the management of each, it is evident that the recommendations which they make should tend to greater efficiency in the management of all."

The managers of the Hudson River State Hospital, in their report to the Legislature for 1893, state: "With the additional beds that have been provided the capacity of the hospital is now 1,400—750 in the men's department and 650 in the department for women."

In view of the allegation recently made that the policy of the commission in lunacy has resulted in seriously overcrowding the Hudson River State Hospital, it is proper to state in connection with this subject that the present number of inmates of this hospital (February 1, 1894) is 710 men and 635 women, a total of 1,345 patients, or 55 less than the capacity of the hospital as certified to the commission by the managers.

The managers of the Rochester State Hospital, in their annual report to the State Commission in Lunacy for 1893, say: "The unsatisfactory condition of the buildings, noted in our first annual report, has been removed to a considerable extent, and it has been demonstrated that the thorough renovation recommended at that time can be carried out successfully and economically."

"In accordance with plans and specifications prepared by J. Foster Warner, architect, in conformity with the recommendations of the State Commission in Lunacy and Architect I. G. Perry, an administrative department and a new department for male patients have been constructed, within the amount appropriated therefor. *The crowding which we so strongly deprecated in former reports is thereby relieved and the comfort of the patients largely enhanced.*"

In this same report the superintendent of the hospital says: "Through the liberality of the State Legislature the managers of the Rochester State Hospital have been enabled to build and furnish, at a per capita cost of $550, four large, well-lighted, cheerful wards, with dormitory and lavatory accommodations, and an administrative building, with comfortable apartments and convenient offices.

"A large embayed extension has been built in connection with wards four, six, and eight in the female department, which adds much to their attractiveness. Verandas, that command a wide and beautiful view, have also been added to these wards."

Surely there is nothing in the foregoing extracts from the reports of the State hospitals which would justify the assertion recently made that these institutions "are rapidly deteriorating as curative institutions."

It has also recently been asserted that the State hospitals are being greatly overcrowded. It should be borne in mind in connection with this subject that there is scarcely a public hospital or asylum for the insane in this or in any other country whose annual reports do not from time to time teem with complaints of overcrowding, and whose superintendents do not frequently cry out for relief in this matter. Certainly this has been true of all hospitals and asylums in the State of New York for the past thirty years, until overcrowding came to be regarded as a normal condition. When the Lunacy Commission began its official work it found, in the Utica State Hospital, patients uncomfortably housed in an abandoned chapel, in the fourth story of the administration building, also in the barren attic of an outbuilding. At the Middletown State Hospital it found a considerable number of patients crowded into the attic of the administration building, while at the same time there were instances of private patients who were provided with a suite of rooms and two private attendants, each of whom occupied single rooms. In one of the buildings of the Binghamton State Hospital nearly a hundred patients of the most disturbed and violent class were crowded into a dark, dilapidated, and unwholesome basement, which, as regards noise and violence, was the nearest approach to the ideal "bedlam" that the writer has ever seen in this or in any other State or country. Suffice it to say that the use of these places as receptacles for insane patients has, in each instance, been abandoned, and their former occupants are now all comfortably housed in suitable and proper quarters. And this, notwithstanding the fact that, in obedience to the duty imposed upon it by the State Care Act, the commission has removed from the poorhouses, where they were in a condition of wretchedness, squalor, and neglect, in round numbers, two thousand patients, to the custody of the State, where they are now comfortably housed, fed, and clad, and provided with proper medical supervision and care, thus accomplishing, within a period of three years, the work that all efforts in that direction during the past thirty years had failed to accomplish. The work of rapidly transferring to the care of the State this large number of insane poor necessarily involved some temporary embarrassment and discomfort to the State hospitals, but it is gratifying to say that, except in two or three instances, the officials of these hospitals have cheerfully co-operated with the commission in carrying out this delicate and difficult duty, realizing that the discomfort was a necessary incident to the change of methods and that it would rapidly disappear when the transition state was passed.

Regarding the statement which has recently been put forth, that there is a growing sentiment averse to the Lunacy Commission, and that the whole procedure of the commission is tending to convert the State hospitals into immense pauper establishments; that these institutions are rapidly deteriorating as curative establishments, owing to the lowering of the standard of care and overcrowding of them by the commission, the statement is not sustained by the facts. On the contrary, since its creation down to the present time, the commission has constantly had the confidence and support of the Chief Executive, of the State Comptroller, and substantially of all of the members of both Houses of the Legislature, regardless of party, while its work has been officially commended by most of the hospital managers and by a large majority of the medical officers of both the public and private institutions for the insane, as well as by the State Charities Aid Association, whose report on the dependent insane and the administration of the laws relating thereto, for 1893, contains the following: "It is, however, fully aware that good laws, badly administered, often fail of their purpose, and it is, therefore, with pleasure that we now place on record our belief that these laws have been ably and fearlessly administered by the State Commission in Lunacy."

By the act of 1893, which provides for the support of the dependent insane by the State, and which went into effect on October 1st last, the Legislature put upon the Commission in Lunacy the responsibility of a general supervision of the expenditures of the State hospitals. The law requires the hospital authorities to present to the commission each month an itemized estimate of expenses for the coming month. These estimates the commission is required to scrutinize, and is empowered to revise, as in its judgment seems best, whether as regards quantities, qualities, or prices of supplies, the object of the law being to place upon some central and independent body the duty of regulating the expenditures of the large sums of money which, under the State Care Act, require to be annually appropriated by the Legislature for the care and treatment of the insane.

The commission, with a full sense of its duty to the welfare and comfort of the dependent insane on the one hand, and of its responsibility to the taxpayers on the other, entered upon the work of passing on the monthly estimates with the beginning of the fiscal year, October 1,

1893. This involved the originating and putting into practical operation of an entirely new financial system for the State hospitals, and was, of course, a radical departure from the old methods of expenditure and of accounts, the funds received by the State hospitals from counties, private patients, and from other sources having hitherto been expended by the superintendents of these institutions in their discretion, subject only to approval and audit by the local boards of managers.

Under the former system, which had been in operation for many years, many abuses naturally grew up, and it is a fact that in at least three of the hospitals great extravagances have existed. It should be said, however, that this statement would not apply to all of the State hospitals, as certain of them are believed to be very carefully conducted as regards their expenditures, as well as in the matter of discipline and the medical care and treatment of their inmates, so that any general or sweeping criticism unfavorable to the State hospitals as a whole would be manifestly unjust. The recent investigation of the management of the Hudson River State Hospital revealed, as the printed testimony shows, a most shocking state of affairs. The per capita cost of maintenance in that institution was shown to have been much higher than that of any other State hospital, while the rate of recovery and standard of care generally was far below that of the other hospitals. The institution was disorderly and demoralized, and great extravagance and looseness in methods of expenditure and in the auditing of bills was found to exist. These facts were substantially admitted by several members of the board of managers, who professed ignorance of them on the ground of inattention on their part. It is proper to state that under the new superintendent this hospital is rapidly being brought up to a high standard of efficiency.

The commission, since October 1, 1893, when it began the work of supervising the expenditures of the State hospitals, has endeavored to curtail expenses by lopping off what it regarded as clearly improper and unnecessary items of expense, and also by disallowing certain other expenditures which, in its judgment, could not properly be charged to the maintenance fund. In numerous instances, however, the commission has increased the sum of the estimates by insisting on the purchase of a better quality of supplies than was called for by certain of the hospitals, notably in the matter of tea, coffee, flour, meats, stimulants, clothing, and blankets. In its efforts to reduce the financial system of these hospitals to a business basis and put a proper check upon expenditures, it was inevitable that the commission should encounter criticism and even hostility on the part of those whose pet methods it had interfered with, not to speak of the ill-will of certain local tradesmen whose profits were doubtless largely diminished. It would also be surprising if, in establishing a financial system of such vast magnitude and immense detail, and involving such widespread interests, the commission should not have made mistakes in minor matters and should have succeeded in completely avoiding friction with hospital authorities, especially in the organizing stage of the new system. The superintendent of the Utica State Hospital, in his report already referred to, says: "The transition from the old order of things to the new will not be accomplished without friction. Soon, however, the machinery must adjust itself to the new requirements. And surely one may safely leave the future to take care of itself, if, in meeting the new problems that will arise, we pause to ask ourselves the simple question whether the end we have in view is the application to our everyday work among, and in behalf of, the insane of the humane principle that underlies the State Care Act, and which alone made its passage possible."

It should be borne in mind that the commission does not originate the estimates, but simply revises and approves them, and that superintendents are free to insert in their estimates any proper item of expenditure. Neither does the commission disburse the funds for these expenditures, as has been alleged, nor does it direct where these expenditures shall be made. It has, however, endeavored to enforce the policy of having staple articles of food supply for the hospitals, such as flour, sugar, tea, coffee, coal, etc., purchased in bulk for all the hospitals and at wholesale rates, the purchases being negotiated for by a committee of the superintendents themselves, and in this it believes it will be sustained by the business sense of the community and by the medical profession as well. Nor is the commission interested in securing the trade of these hospitals to any particular dealers or class, and any statements to the contrary are absolutely and unqualifiedly false. Furthermore, the writer unhesitatingly asserts that the true explanation of the animus toward the commission which is now being manifested by two or three of the hospital superintendents and their managers is to be found in the fact that the new system of supervision of expenditures by an independent body deters these superintendents from inserting in their estimates items for the purchase of grossly improper and extravagant articles for their own personal use, purchases which, under the former system, they have been free to make without let or hindrance.

Vouchers of at least three of these hospitals on file in the State Comptroller's office show a most lavish expenditure for themselves and the entertainment of managers and friends, while at the same time supplying patients with a low grade of food supplies, including the quality of beef known as "chucks" and "necks" at four cents a pound, fish at two cents and a half to three cents a pound, also inferior, adulterated foods, especially tea and coffee.

The commissioners realize that the people of the State are abundantly able and willing to provide everything that is essential for the proper care and treatment of its dependent insane, and they have determined that these unfortunates shall not be denied any of these essentials; but they would be recreant to their trust and to their oath of office if they failed to promptly check to the full extent of their powers any tendency which they may discover in the direction of extravagance, improper expenditure, or misapplication of the public funds.

In concluding this branch of the subject it may be said that a careful estimate of the expenditures of the State hospitals under the new system, including everything that is proper and necessary to be supplied out of the public funds, will show that a large annual saving to the taxpayers of the State, aggregating at least $250,000, will undoubtedly be effected.

Respecting the allegation which has recently been put forth that the commission has prohibited the use of tobacco in the State hospitals, it may be said: The commission has made no order forbidding the use of tobacco in these institutions. It has simply disallowed the items for that article in the hospital estimates. So far as action by the commission is concerned, the inmates of the State hospitals are not prohibited from using tobacco, except at the expense of the State. It is a fact that a large proportion of these patients obtain tobacco from their friends, from employees, and from visitors. In fact, it is practically impossible to abolish the use of tobacco absolutely in hospitals for the insane. The action of the commission has merely tended to minimize the abuse of tobacco chewing in State hospitals, which was a very serious one, as many patients without sufficient mentality to exercise a rational judgment in the use of tobacco have simply saturated themselves with it, and cases of tobacco poisoning are not infrequent. Repeated instances have occurred of patients drinking the tobacco expectoration from the cuspidors and extracting the quids of tobacco from these receptacles and chewing the same. Furthermore, observation has shown that many patients have acquired the tobacco-chewing habit after admission to the hospital, and certainly it is a serious reflection upon the management of a hospital for the insane to have patients acquire a habit of this kind while in their custody and care. Instances of young adults who have become addicted to tobacco chewing after coming to the hospitals are very common, and the proportion of tobacco chewers to the population in asylums is very greatly in excess of that in the sane population outside, so far as it can be approximately determined. Moreover, experience has shown that wherever the practice of issuing tobacco to patients in hospitals for the insane has been discontinued, it has been attended with most satisfactory results, as attested by the testimony of Dr. Cronyn, president of the Board of Managers of the Buffalo State Hospital, who abolished the use of tobacco in an asylum for the insane of which he was formerly superintendent; of Dr. A. E. Macdonald, the general superintendent of the New York city asylums for the insane, in which the use of tobacco was abolished in 1874 and has never been renewed; and of the writer, when superintendent of the Auburn State Asylum, in which the practice of furnishing tobacco was abolished in 1880.

It would be easy to show that the unrestricted use of tobacco, which has heretofore obtained in several of the State hospitals, has resulted in marked demoralization and filth in the wards, and in numerous cases has directly aggravated mental conditions, especially those of an irritable form, tobacco being a direct irritant to the heart.

Regarding the use of tobacco in the New York city asylums for the insane, Dr. A. E. Macdonald, in a letter under date of November 6, 1893, says: "In answer to the inquiry of your commission regarding the use of tobacco in the city asylums, I beg to say that such use was discontinued shortly after my appointment to the City Asylum, Ward's Island, in the fall of 1874. I found, upon assuming duty there, that tobacco was issued indiscriminately by the warden, matron, and other lay officers, without any reference to the physicians; that its use was either for the purpose of securing special work or in order to pacify patients who threatened disturbance or violence unless tobacco was given to them.

"Much turbulence and quarreling among the patients was caused by this distribution—stronger patients forcing weaker to give them their share of the distribution—and in some instances serious trouble was caused by tobacco poisoning through the swallowing of the tobacco by demented patients; at the same time the effect upon the discipline and cleanliness of the asylum was markedly unfavorable.

"The abandonment of the use of tobacco has not resulted unfavorably in my experience; on the contrary, there has been a decided improvement in the condition of the patients and of the buildings.

"I do not think that the deprivation of tobacco causes any greater distress to individual patients than the deprivation of liquor or other indulgences to which they have been accustomed, and I see no good reason for its general use or distribution.

"If tobacco is to be used at all in asylums, I should favor its use only by convalescent or chronic cases, who might be rewarded for work by being permitted to smoke in places and at times specially designated for the purpose. I should not advocate its being issued indiscriminately or for use otherwise."

Dr. H. G. Matzinger, of the Buffalo State Hospital, writes as follows regarding the use of tobacco in that institution: "During your last visit here you requested me to write you my experience with the use of tobacco among insane patients, and my opinion of the effect of its discontinuance.

"In nine cases out of ten the chewing habit led to uncleanliness of greater or less degree, according to the personal habits of the patient. His face and clothing always bore ample evidence of its use, often to a nauseating degree, and his idle hours were spent in filling spittoons, from which it was not uncommon to see other patients take the quids and chew them.

"In many cases the habit of chewing was acquired by begging a sufficient quantity, and so the demand grew, and the friends were importuned to bring it, if refused by the physician. When it was the custom to reward some patients for work or to induce them to work by offering tobacco, others soon discovered the fact and frequently objected to doing anything unless they received their share, even though they never used it. It was then traded for other things with other patients, or workmen on the grounds.

"In two cases which I recall now a serious form of tobacco poisoning occurred. One, a negro, employed in the engine room, has had several periods of quite prolonged illness following the immoderate use of chewing tobacco. He exercises no discretion whatever in its use, has periods of irritability when it is difficult to keep him continuously at work, and at such times he was given a larger supply by the fireman in order that he might not be short of help.

"The other, a mild dement, was issued his ordinary supply at the end of the week and apparently devoured all of it within a few hours afterward. He was brought to the ward and soon passed into a condition approaching collapse. He was cold, pale, tremulous, and almost pulseless. On inquiry, it was found that he had been eating a large amount of tobacco. He was given a dose of oil and soon passed a black mass of macerated leaves, filling half the vessel. After this the patient gradually recovered his ordinary condition.

"It was quite a common occurrence to have patients suffer from indigestion and headache, due directly to the use of tobacco in quantities to which they were not accustomed.

"On the whole, I do not recall that smoking caused any trouble. It was always done under supervision, and was not allowed on any part of the grounds or in the buildings except in the smoking room of the cottage. It proved a great source of comfort to many aged people and patients who had been accustomed to it for many years.

"When the order of the superintendent to discontinue the use of tobacco, which resulted from an informal discussion of the subject between yourself and the medical officers of the hospital on the occasion of your last official visit, was first put into force, there was considerable objection for a few days, but since then we have experienced no trouble of any kind. Patients are as industrious as before, and no deleterious result has been observed.

"All inquiries on the part of patients and their friends in relation to the use of tobacco are met satisfactorily and finally by the statement that it is not allowed. The interdiction of the general use of tobacco in this hospital has, far from causing annoying unpleasantness, been most gratifying, removing a great source of personal uncleanliness, of dissatisfaction, and of possible injury to health."

Having thus outlined the principal points which have presented themselves in relation to the practical workings of recent legislation for the insane in the State of New York, and having cited from official reports of the hospital managers and superintendents ample proofs of the main position herein taken, namely, that the present laws respecting the insane, as administered, have resulted in marked improvement in the condition, equipment, and management of the hospitals, and in the general well-being of their inmates, while at the same time effecting important economies in expenditure of the State's money, the writer feels that the commissioners in lunacy may justly maintainthat, in their administration of these laws, they have been actuated solely by a desire to promote the welfare and comfort of the State's insane, and, as one of the most efficient means to this end, they have steadily aimed, both individually and collectively, to have the best features in each hospital's work adopted by all the others.

In conclusion, it is gratifying to be able to state that, in its efforts in this direction, the commission has had the cordial co-operation of a large majority of the superintendents and medical officers generally, to whom much credit is due for the measure of success that has been attained.

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ANIMAL EXTRACTS AND JUICES IN THE TREATMENT OF DISEASE.

Since we last discussed this subject some notable contributions have been made to its literature. For example, at a recent meeting of the *Société nationale de médecine de Lyon*, the proceedings of which are reported in the *Province médicale* for April 21st, M. Teissier and M. Fraenkel made a report of their researches on the physiological action of injections of a glycerin extract of the kidney in persons affected with albuminuria. They said that these researches had been undertaken at the instigation of the late Professor Brown-Séquard, in order to ascertain as exactly as possible the influence of the renal liquid on the great organic functions, and especially on the elimination of toxic substances by the urinary secretion. They had been carried out with the glycerined extract prepared by M. Jacquet from the substance of the sheep's kidney by carefully triturating it and macerating it for twenty-four hours in a ten-per-cent. mixture of glycerin and water. This preparation is said to be absolutely harmless, and the limits within which the quantity injected may vary are very large; in an animal, for each kilogramme of the weight twenty cubic centimetres may be injected beneath the skin or into a vein without occasioning any unpleasant results or any disturbance of the urinary function. An injection of a hundred cubic centimetres to the kilogramme, on the contrary, gives rise to speedy death with intense dyspnœa, nystagmus, and convulsions. In patients, they injected only two cubic centimetres a day for the first few days, and afterward the same quantity twice a day. Even from such very small doses highly interesting effects had been noticed.

The authors selected two patients, one of whom was affected with typical interstitial nephritis, with œdema, cardiac disturbances, and general troubles connected with urinary insufficiency, and the other of whom had dyscrasic albuminuria. These patients were put upon the use of a strict milk diet for three days, so as not to interfere with the results of the observations. During these three days the urine was fully tested for urea, phosphates, chlorides, etc., and its toxicity was established according to Bouchard's method. The density of the blood was ascertained by Lyonnet's process, and the red and white blood-corpuscles were counted. In this way each patient's nutritive condition was established, the mean of the figures obtained during the three days of observation being taken. This method of observation was pursued for five days, on each of which the renal extract was administered subcutaneously; then for three days no injections were given.

There was no change in the quantity of urine passed. There was no apparent modification of the density of the blood or of its corpuscular composition, but there was a slight increase of the arterial pressure. On the other hand, there were very perceptible modifications of the chemical constitution of the urine and especially of its toxic property. In the patient affected with interstitial nephritis a slight increase of urea was noticed; there was no change in the proportion of chlorides, but there was a marked increase of the phosphates. There was a sensible augmentation of the urinary deposits, together with a heightening of the uro-toxic co-efficient, without the quantity of albumin being modified. But the most important fact noted was the property of producing myosis possessed by the urine passed on and after the second day of the period of injections used in quantities of only sixty cubic centimetres, while during the preparatory period this phenomenon, which is in some sort an index of the degree of toxicity of the urine, did not occur at all or only to an almost inappreciable degree after the use of three hundred and fifty cubic centimetres.

In the second case the results were analogous in the main, although they differed in some matters of detail. The urea suddenly increased from 20·75 grammes to 26 grammes, and the chlorides rose from 5·70 grammes to 9·80 grammes, without change in the phosphates. But the most interesting feature was the disappearance of the albumin during the days on which the injection was practiced, in spite of a higher temperature, and its reappearance after the injections were discontinued. Moreover, as in the first case, there was a considerable rise of the uro-toxic co-efficient.

The most important point in these authors' observations is the establishment of the fact that these injections augment the kidney's power of eliminating toxic substances. Undoubtedly, says the report, this elevation of the uro-toxic co-efficient is to be attributed to the elimination of the substance injected, but its amount is so small as to be lost in the whole amount of urine passed in twenty-four hours. One is inclined therefore to invoke dynamic action favoring the oxidation of the products of disintegration by exciting the secretory faculty of the renal parenchyma, the integrity of which is perhaps necessary for elaborating the toxic substance to be eliminated. Finally, the feeling of general amelioration experienced by the patients during the use of the injections is to be mentioned. As a result of their physiological action and their harmlessness, thus demonstrated, the use of these injections seems to the authors to be warranted in the treatment of nephritis. As a matter of fact, M. Teissier has already used them with advantage in a certain number of cases.

The general subject of the use of organic extracts and juices in therapeutics was made the topic of discussion at a recent meeting of the *Gesellschaft für innere Medicin*, of Berlin, a report of which we find in the *Gazette médicale de Paris* for April 28th. Dr. Fürbringer is reported as having maintained in this discussion that the method acted mainly by suggestion. In his practice no good results had been obtained by the injection of testicle juice. Moreover, the favorable cases, those in which benefit had been obtained in the treatment, he said were rare and did not prove the antidotal virtue of the medication. The speaker remarked that Pohl regarded spermine as a vital principle scattered through the entire organism; therefore the introduction of spermine into the system would be indicated when the elements of the economy contained it in smaller quantity than normal. It was in conditions in which oxidation was imperfectly performed that spermine found its indication. While the speaker was thus severe on testicle juice, he admitted the superiority of the treatment of myxœdema with thyreoid extract. Pancreatic juice employed as a remedy for diabetes, he said, had not yielded brilliant results. Vitaline, a compound of several extracts, was often employed in Russia, but the statistics of cases treated by its use were not encouraging. American practitioners and Onimus, of Monaco, had spoken highly of cardine, obtained by macerating the heart of a bullock for eight months; the results obtained seemed to be remarkable. Brown-Séquard and Dieulafoy had experimented with nephrine in diseases of the kidney, and had proclaimed its good effects. Finally, said the speaker, except thyreoid extract and possibly Pohl's spermine, the organic extracts should not yet be used outside of the laboratory. The clinician's function consisted in distinguishing between what was really due to the medication and what was produced by suggestion.

Dr. Goldscheider followed with an account of his lack of success in the use of various animal extracts and juices. He admitted, however, that Brown-Séquard's theory rested on a scientific principle, but thought that thus far its practical application had necessarily been more or less haphazard. Not until physiology had tried and determined the essential elements of each extract, he concluded, could the organic liquids be considered as of much assistance in therapeutics.

ETHYL BROMIDE AS AN ANÆSTHETIC.

In the *Journal des praticiens* for May 2d there is an article on this subject by M. Eloy, who says that there is at the present time a movement in favor of this drug as an anæsthetic, and physicians are therefore interested in knowing when and how to use it. The chemical purity of the drug, he says, may be ascertained by the following characteristics: It is a colorless liquid, refracting and dense; the odor is like that of chloroform; it has a burning taste, and boils at 100·2° F. or 102·1°. It is insoluble in water, soluble in alcohol, in ether, in chloroform, and in oil; it is slightly inflammable, and, as it decomposes on exposure to air, light, or dampness, it should be kept in yellow bottles carefully corked.

Ethyl bromide possesses very useful physiological properties. When inhaled, it produces narcosis in two stages. The first is that of partial anæsthesia with full consciousness; the sensibility and the perceptions become deadened, and there is little or no trouble with the respiration or the circulation. In the second stage there is anæsthesia with loss of consciousness, trembling of the muscles, and dilatation and insensibility of the pupils. There is no perceptible alteration in the pulse; there is a slight change in the blood pressure, and there is very little cardiac disturbance. According to Bottinger, ethyl bromide does not change the blood; it spares the corpuscular elements of the blood and is rapidly eliminated by the lungs, the skin, and the kidneys. Its action is powerful and, above all, rapid. Narcosis follows its administration in from thirty seconds to a minute, and is kept up by inhalations repeated every minute for about ten or fifteen minutes, beyond which time it is dangerous to continue the inhalations. During this procedure there is no suffocation or cyanosis, and the features do not change. On the patient's awakening, there is a prompt return to the normal condition, and there is very rarely any vomiting, headache, or contraction of the pupils. With regard to these phenomena, M. Pouchin attributes the anæsthesia of ethyl bromide to an unknown action on the nervous centers. According to Lewis, ethyl bromide can not be used in long operations, as the anæsthesia is of short duration; neither can it be used where the loss of blood is likely to be considerable, as it may increase it. These are the physiological contraindications to its employment. The clinical contraindications, according to Sternfeld, are pulmonary tuberculosis, acute and chronic bronchitis, pulmonary emphysema, cardiac disease, pronounced anæmia, and hysteria; also, according to Gunsburg, alcoholism.

Ethyl bromide may be taken internally in doses of five or six drops in water, or in capsules, or in solution in alcohol. The inhalations produce an insensibility which is useful in small operations, such as incision of superficial tumors, of the skin, and of the mucous membranes, etc.; it is useful also in dentistry and in obstetrics, where it is applied in the same manner as chloroform in normal or complicated confinements. It may be employed before chloroform inhalations as a sort of preparatory anæsthesia to shorten the initial stage of chloroform narcosis. M. Poitou-Duplessy considers that these inhalations of ethyl bromide weaken the laryngeal, nasal, and bronchial sensibility.

With regard to the administration of ethyl bromide, the author remarks that it varies according to the operator and the attendant circumstances. Some physicians produce anæsthesia with ethyl bromide alone, others a "mixed" anæsthesia with ethyl bromide and chloroform. The former is rapid and short, suitable for slight operations; the latter is a preparatory anæsthesia, prolonged and completed by chloroform narcosis for serious operations. The following method of using ethyl bromide is recommended: A flannel mask which has been thoroughly saturated with the drug is applied quickly to the nose and the mouth in order to keep out the air. The face becomes discolored, ocular congestion and muscular relaxation follow, and at this moment the operation should be performed. Contraction of the jaws may take place, impeding the opening of the mouth, and when this resistance ceases the narcosis has disappeared and the inhalations must be repeated. In "mixed" anæsthesia M. Chaboux, of Rouen, uses the following method: 1. Cover the face as far as the chin with a flannel mask having a framework of wire. 2. Thoroughly saturate the flannel with from 150 to 225 grains of ethyl bromide, and repeat this in twenty seconds with the same quantity. 3. Keep the mask on for forty or forty-five seconds, when slight suffocation, facial congestion, and swelling of the vessels of the neck will take place. 4. Replace the ethyl bromide with chloroform, which is administered by the standard method. In this way a diminution of the normal period of excitation and vomiting is observed during and after the anæsthesia. It would be well, says M. Eloy, for all physicians to interest themselves in the subject of ethyl bromide as an anæsthetic.

MINOR PARAGRAPHS.

THE SANITARY REGENERATION OF HAMBURG.

Some months ago we published a communication in which it was shown that the sanitary condition of the city of Hamburg had been maligned during and after the cholera invasion of the summer of 1892. In the forthcoming June number of the *Atlantic Monthly*, for an advance copy of which we are indebted to the publishers, Messrs. Houghton, Mifflin, & Co., there will be found an exceedingly interesting and instructive article entitled Hamburg's New Sanitary Impulse, by Mr. Albert Shaw, of the *Review of Reviews*. Mr. Shaw shows abundantly that in everything but its water supply Hamburg was in a condition in the summer of 1892 that was not open to serious criticism from a sanitary point of view, and that, as to that one particular even, a magnificent system of filtration of the Elbe water was in process of establishment, although, unfortunately, with its inlet not far enough above the harbor. The works were hurried to their completion, but somewhat too late; the cholera came, with what disastrous results to Hamburg we all know. But out of the nettle danger Hamburg is plucking the flower safety. Mr. Shaw declares that its drinking-water is now perfectly safe and palatable. Incidentally, it is interesting to learn that the new municipal Hygienic Institute is under the direction of one of our own countrymen, now a naturalized German citizen, Dr. Dunbar, a native of St. Paul, Minnesota, whose experiments Mr. Shaw speaks of as of extraordinary interest. We look upon the publication of Mr. Shaw's article in a magazine of general literature as peculiarly appropriate, since it is there more likely to make an impression on the public mind than if it had seen the light in company with only technical matter.

PERUVIAN BALSAM IN THE GASTRO-INTESTINAL DISEASES OF CHILDREN.

This substance, says the *Revue mensuelle des maladies de l'enfance*, was recommended by Trousseau and Pidoux in chronic intestinal catarrh, especially in diarrhœa, with or without tenesmus, in typhoid fever, and in infectious dysentery. Now, according to the same journal, Nuggia has found it useful in the gastro-intestinal diseases of children. He uses a solution of from a grain and a half to three grains of the balsam (for very young children; for older children, from four and a half to eight grains) in a mixture of forty-six grains of alcohol, two hundred and seventy-five of syrup of lemon, and twelve hundred of water. It is to be presumed that this amount is given in twenty-four hours.

CASTRATION AS A REMEDY FOR HYPERTROPHY OF THE PROSTATE.

In the *Centralblatt für Chirurgie* for April 28th Dr. Fredrik Ramm, of Christiania, gives the notes of a case of prostatic enlargement in which he resorted to this procedure with benefit, and lays down the following propositions: 1. The prostate belongs among the sexual organs. 2. It becomes developed after the occurrence of puberty or simultaneously with it. 3. In cases of malformation of the sexual organs it retains its infantile size, as in cases of castration before the period of puberty. 4. After castration in adults it withers. 5. A hypertrophied prostate shrinks after castration; the process begins at once and goes on increasing. 6. This decrease of the prostate in volume after the removal of both testicles may be turned to account in the treatment of mechanical impediment to urination occasioned by hypertrophy of the prostate.

A STRIKING INSTANCE OF FECUNDITY.

The *Journal de clinique et de thérapeutique infantiles* for May 10th says that a woman forty-nine years old lately presented herself at the Belleville Dispensary with the story that, having been married three times, she had had twenty-five children born alive and two miscarriages at advanced periods of pregnancy. All her sons, nineteen in number, died in childhood, but she has five daughters left, the eldest of whom, twenty-eight years old, is now six months pregnant.

THE EXPERIMENTAL PRODUCTION OF MONSTROSITIES.

We find it stated in the *Gazette médicale de Paris* for May 5th that at a recent meeting of the *Société de biologie* M. Féré reported that by injecting various microbic toxines into the whites of hens' eggs in process of incubation he had succeeded in producing monstrosities in 58·33 per cent. of the eggs, while in eggs not interfered with the percentage was only four.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 22, 1894:

DISEASES.	Week ending May 15.		Week ending May 22.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	7	3	6	1
Scarlet fever	133	13	136	10
Cerebro-spinal meningitis	2	2	4	3
Measles	231	9	162	10
Diphtheria	239	70	237	67
Small-pox	19	3	11	6

The New York Dermatological Society.—At the annual meeting, held on Tuesday evening, the 23d inst., officers for the ensuing year were elected as follows: President, Dr. Hermann G. Klotz; secretary, Dr. Samuel Alexander; executive committee, Dr. Charles W. Allen, Dr. John A. Fordyce, and Dr. S. Lustgarten.

The Honorary Degree of Doctor of Laws, we learn from the *Medical News,* was conferred recently on Dr. William Goodell, of Philadelphia, by the Jefferson Medical College.

The Police Surgeons of New York City.—A bill increasing the annual salary of these officers from $2,200 to $3,000 has been passed by the Legislature and signed by the Governor.

The Hudson County District Medical Society of the State of New Jersey.—At the annual meeting, held on May 1st, officers for the ensuing year were elected as follows: President, Dr. F. M. Corwin; vice-president, Dr. J. J. Broderick; secretary, Dr. J. M. Rector; treasurer, Dr. A. H. Brinkerhoff, Jr.; reporter, Dr. J. A. Exton.

Changes of Address.—Dr. Parker Syms, to No. 60 West Forty-seventh Street; Dr. J. F. Terriberry, to No. 120 West Seventy-third Street.

The Death of Dr. Charles James, of Brooklyn, occurred by a shocking misadventure on Tuesday, the 22d inst. In the dark he seized a bottle containing tincture of aconite and swallowed a teaspoonful of the contents, instead of a medicine that had been prescribed for him by a colleague. The deceased was twenty-seven years old and a graduate of the Long Island College Hospital Medical School.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 13 to May 19, 1894:*

Hubbard, Van Buren, Major and Surgeon, is granted leave of absence for four months, on surgeon's certificate of disability.

Chapin, Alonzo R., Captain and Assistant Surgeon, is granted leave of absence for three months, on account of disability, with permission to leave the Department of Texas.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending May 19, 1894:*

Ross, John W., Surgeon. Placed on the retired list. May 11, 1894.

Society Meetings for the Coming Week:

Monday, *May 28th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *May 29th:* Congress of American Physicians and Surgeons (first day—Washington); American Otological Society (first day—Washington); American Neurological Association (first day—Washington); American Gynæcological Society (first day—Washington); American Dermatological Association (first day—Washington); American Pædiatric Society (first day—Washington); American Surgical Association (first day—Washington); Association of American Physicians (first day—Washington); American Orthopædic Association (first day—Washington); Association of American Anatomists (first day—Washington); American Association of Genito-urinary Surgeons (first day—Washington); American Physiological Society (first day—Washington); American Climatological Association (first day—Washington); Mt. Sinai Hospital Alumni Association, New York; Medical Societies of the Counties of Queens (annual—Mineola), Rockland (annual), and Ulster (annual), N. Y.; Boston Society of Medical Sciences (private).

Wednesday, *May 30th:* Congress of American Physicians and Surgeons (second day); American Otological Society (second day); American Neurological Association (second day); American Gynæcological Society (second day); American Dermatological Association (second day); American Pædiatric Society (second day); American Surgical Association (second day); Association of American Physicians (second day); American Laryngological Association (first day—Washington); American Orthopædic Association (second day); Association of American Anatomists (second day); American Association of Genito-urinary Surgeons (second day); American Physiological Society (second day); American Climatological Association (second day); American

Ophthalmological Society (first day—Washington); Auburn, N. Y., City Medical Association; Medical Society of the County of Monroe (annual—Rochester), N. Y.; Berkshire, Mass., District Medical Society (Pittsfield).

Thursday, *May 31st:* Congress of American Physicians and Surgeons (third day); American Otological Society (third day); American Neurological Association (third day); American Gynæcological Society (third day); American Dermatological Association (third day); American Pædiatric Society (third day); American Surgical Association (third day); Association of American Physicians (third day); American Laryngological Association (second day); American Orthopædic Association (third day); Association of American Anatomists (third day); American Association of Genito-urinary Surgeons (third day); American Physiological Society (third day); American Climatological Association (third day); American Ophthalmological Society (second day).

Friday, *June 1st:* Congress of American Physicians and Surgeons (fourth day); American Dermatological Association (fourth day); American Pædiatric Society (fourth day); American Surgical Association (fourth day); Association of American Physicians (fourth day); American Laryngological Association (third day); American Orthopædic Association (fourth day); American Association of Genito-urinary Surgeons (fourth day); American Ophthalmological Society (third day); Baltimore Clinical Society.

Saturday, *June 2d:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private), New York; Miller's River, Mass., Medical Society.

Answers to Correspondents:

No. 425.—It probably would not have such an effect, but would simply produce coagulation. It is a violent poison.

Letters to the Editor.

HYOSCINE.

Chicago, *May 12, 1894.*

To the Editor of the New York Medical Journal:

Sir: The reading of The Extraordinary Effects of a Large Dose of Hyoscine in your issue of the 28th ultimo recalls to my mind a similar case which occurred in my practice a number of years ago, about the time that hydrobromide of hyoscine was being put on the market. I had had absolutely no clinical experience with the drug, and took the promoter's *ipse dixit* for what there was in it, my only knowledge of it being gained in this way.

The hydrobromide of hyoscine seemed to be indicated in the case of Mrs. E., seventy years of age, who had unfortunately been addicted to the excessive use of chloral hydrate for a period of twenty years. At times when her supply ran low, being unable to procure the chloral and having gone without it for a few hours longer than was her wont, her condition would change from one of an apparently quiet and phlegmatic temperament to one of marked mania. It was beyond our power to restrain her until the unnatural desire was appeased, and that could only be accomplished by submitting to her demands for chloral.

During one of her calm intervals she consented to permit our experimenting with a new drug and to lay aside the chloral for twenty-four hours, on the representation that what we offered was a sure remedy.

Accordingly we instructed our druggist to prepare a solution to be taken *per os*, the initial dose being $\frac{1}{150}$ of a grain. Going directly to the patient's house from the drug store with the preparation, I administered a dose at once. Hardly had it been swallowed when there was a violent pull at the door bell, the druggist's clerk entered breathlessly, stating that an error had been made, that the dose was a poisonous one, etc., instead of being $\frac{1}{150}$ of a grain it was $\frac{1}{15}$ of a grain. Within a few minutes after the administration of the dose the patient complained of noises in the head, a sense of fullness, and inability to control the arms or legs or to remain sitting. The respiration was reduced one third, there was constant twitching of the muscles, the pupils were dilated, and the patient stated that she felt as if poisoned.

A bottle of whisky being at hand, I administered at once several ounces diluted with water.

In about fifteen minutes the full effects of the whisky were apparent, counteracting rapidly the hydrobromide, the muscles gradually resumed the usual tone, ringing in the ears subsided, and a feeling of drowsiness came on. At the end of an hour the patient was put to bed for the night and slept for more than six consecutive hours. This was the first sleep she had had in twenty years without the use of chloral. Of course the whisky was a factor in the immediate sleep which followed. In this case the hydrobromide proved to be the entering wedge in the successful treatment of the chloral habit, giving the old lady comparative physical and mental comfort and making the last two years of her life the best years out of more than two decades.

From the first day of administering the hydrobromide of hyoscine to the day of her death, two years later, she had not touched chloral, and was entirely free from the maniacal symptoms cited. John McKinlock, M. D.

CONFUSION BETWEEN ANTISEPTIC TABLETS.

New York, *May 10, 1894.*

To the Editor of the New York Medical Journal:

Sir: There is the greatest danger connected with the word antiseptic when taken into consideration in its designative feature in relation to the two kinds of tablets known as the Dr. Charles Meigs-Wilson tablet and another variety of antiseptic tablet known as the Dr. Carl Seiler tablet. The formula of the latter tablet is not only known to afford a most delightful and effectual remedy for the relief of certain conditions of the mucous membranes of the nose and other cavities of the body, but the drugs therein are harmless when considered from a toxic point of view. Not so, however, with the tablet made up from the Meigs-Wilson formula. In this we have a most deadly corrosive poison to deal with, and what the consequences may be if by error the one should be substituted for the other, particularly if the directions for using the Seiler tablets should be written upon the package in which the deadly substitute has been sent to the patient's bedside, can easily be imagined. Having had a number of such occurrences in my own practice, but where, fortunately, the error was discovered in time to prevent the substitute from being used, is my chief prompter in writing this; besides, I have known it to occur in the practice of other physicians, and recently in one case with terrible results.

It is the duty of all manufacturers of corrosive-sublimate tablets to get into communication with each other and to come to some understanding relative to the use—abuse in this instance—of the word antiseptic in the connection under consideration and to the necessity of doing away with the word entirely, or, what would be much better still, with the manufacture of this variety of tablet, which is a menace to the lives of those engaged in its production, and is also a constant menace to the lives of innocent beings as long as they are carried about in the reckless manner which we all, more or less, are constantly in the habit of doing. I have on many occasions got out of my bed in a terrible state of alarm, which would disappear only after I had convinced myself that I had not left a bottle of those infernal things in a household where I had been operating during the day, and where there were children who might look upon them as candy, by going to my operating bag and finding the bottle of the antiseptic tablets. Not then could I always be sure that such was not the case, for I, like many of us, have several bottles of the tablets in the operating bag at the same time.

This antiseptic is nothing more nor less, aside from being an irritant to recent wounded surfaces, than a dangerous poison; besides, it ruins the instruments with which it is allowed to come in contact, and only in exceptional cases should it be used, and these are so rare that the poison can be obtained in solution at a drug store, the amount not used to be destroyed, and a fresh supply to be provided in like manner for each additional case if there is necessity for the use of the chemical.

Richard H. Gibbons, M. D.

Reports on the Progress of Medicine.

OTOLOGY.

By CHARLES STEDMAN BULL, M. D.

Report of Six Cases of Excision of the Tympanic Membrane and Ossicles.—Hammond (*Annals of Ophth. and Otol.*, July, 1892) recommends the thorough cleansing of the auditory canals with hydrogen peroxide and afterward closing them with plugs of absorbent cotton, the evening before the day of operation. After excision the parts were thoroughly cleansed once daily with a hot saturated solution of boric acid, and the canal kept closed with cotton. The nose and throat were at the same time treated with alkaline spray and astringent applications. Whenever the incus was present, it was removed first, before the membrane was excised entirely. Unless this is done, the incus will be drawn upward and backward after the malleus is detached from it, in which position it becomes difficult and even impossible to remove, and it makes the danger of mastoid inflammation much greater from the position it takes at the opening of the mastoid cells into the bony canal.

The Indications for Opening the Mastoid Process in Infectious Otitis.—Orgogozo (*Ann. des mal. de l'oreille et du larynx*, November, 1892) thinks that in acute infectious otitis the indications for opening the mastoid may be deduced: 1. From the notion of the epidemic state, from the infectious nature of the lesion which points to the moment of intervention when suppuration is rapid. 2. From the extreme intensity of the symptoms of acute suppurative otitis, and from their persistence at an epoch when in simple cases the suppuration generally diminishes. 3. When, after a spontaneous subsidence of the symptoms, or subsequent to incision of the tympanic membrane, intense mastoid pain suddenly returns with abundant suppuration. 4. When in the absence of manifest local signs, cerebral symptoms appear—such as coma, delirium, cephalalgia, vomiting, fever, and severe pain on pressure. 5. When there is a sudden rise in the febrile curve in the course of a suppurative or non-suppurative otitis, in the period of desquamation of grave eruptive fevers complicated by otitis. 6. When there is swelling over the mastoid region with deep fluctuation.

Contribution to the Study of Intracranial Abscesses of Aural Origin.—Picqué and Février (*Ann. d. mal. de l'oreille et du larynx*, December, 1892) think it extremely difficult to establish an invariable rule for the course of suppuration extending from the petrous bone to the brain. The mastoid process, the posterior part of the petrous bone, its apex, or the external auditory canal, may all give rise to cerebellar abscess. Posterior lesions of the petrous bone and of the mastoid process are more likely to give rise to abscess in the cerebellum, while lesions of the superior part of the drum are more likely to cause cerebral abscess. But the germs may follow other channels, no matter where they originate. The course of these abscesses is progressive in children. The cavity increases in size, the walls become attenuated, and rupture may occur into the arachnoid or into the lateral ventricles. Cerebral abscess, no matter what its situation may be, is most frequently associated with other lesions, such as meningitis or phlebitis of the sinuses.

A Scheme of Classification of the Auditory Centers in Connection with the Function of Language.—Giampietro (*Ann. d. mal. de l'oreille et du larynx*, March, 1893) offers the following scheme: 1. Sensory bulbar center. A destructive lesion here causes total peripheral deafness. Aphasia is an irreparable consequence when the lesion occurs before the age of two or three years. 2. Center in the optic layer, "mnemonico-volitive." The patient loses the faculty of speaking or writing in logical order. A vaso-motor lesion of this center causes transitory amnesia. 3. Center in the first temporal convolution, "ideo-phonic." A lesion here causes "ideo-phonic" amnesia or word-deafness. The patient hears the words but does not understand them. 4. Ideo-motor center in the lower border of the third frontal convolution, near the island of Reil. A lesion here causes the typical motor aphasia of Broca, and the patient loses the power of pronouncing words. 5. Ideographic center at the extremity of the second left frontal convolution. A lesion here causes agraphia and is usually associated with motor aphasia and hemiplegia.

Giampietro recognizes three function regions for the auditory nerve: 1. The external peripheral region, including the labyrinthian expansion of the auditory nerve. 2. The bulbar or sensory region or that of the reception of vibratory movements. 3. The perceptive region, in which the vibratory movements are transformed into the perception of sounds.

Deaf-mutes in Denmark.—Mygind (*Arch. of Otol.*, xxi, 4), in a demographic sketch of deaf-mutism, finds that this condition has been on the increase in Denmark during the last twenty-five years. The male deaf-mutes are found to be both absolutely and relatively more numerous than the females. Epidemic cerebro spinal meningitis plays an important part in the present prevalence of deaf-mutism. The mortality rate is not less favorable among deaf-and-dumb children than among normal children, when the former live under good sanitary conditions. There is more deaf-mutism among the rural population than among the town population. There is no evidence of deaf-mutism being endemic in any place in Denmark, and the difference between the various rural districts must be principally attributed to epidemic causes. The high rate of the northern and western districts of Jutland must be attributed to recent epidemics of cerebro-spinal meningitis. The rural districts which are most heavily burdened with deaf-mutism are on the whole the least fertile and thinnest populated districts in Denmark. The majority of Danish deaf-mutes belong by birth to the agricultural population—that is, to those classes of society which are least favorably situated economically as well as socially. Only 7·1 per cent of the deaf-mutes who had left the deaf-and-dumb institutions, or who had been confined, use oral speech exclusively as their means of communication. Deaf-mutes in Denmark intermarry with comparative frequency, and deaf and dumb women very frequently marry deaf and dumb men. The marriages where husband and wife were deaf-mutes seem to have been especially sterile. The small number of children born of deaf-mute marriages is, to some extent, owing to the fact that the average age at marriage of deaf-mutes, and their husbands or wives who were not deaf and dumb, is somewhat advanced, compared with that of the general population. It deserves notice that not a single child born in the marriages of deaf-mutes was itself deaf and dumb.

Contribution to the Surgical Treatment of Ear Diseases.—Schmiegelow (*Arch. of Otol.*, xxi, 4) advises injections through the perforation of the drum head, in suppurative cases, with the aid of Schwartze's or Hartmann's tympanic cannulæ, in conjunction with the enlargement of the perforation by the galvano-cautery, and with the application of caustics melted upon the points of slender sounds. When necessary to perform excision of the tympanic membrane, the malleus and incus should also always be removed. In operating for carious affections of the walls of the attic, he chisels into the antrum and at the same time removes the posterior wall of the auditory canal throughout its entire length.

Observations on the Functional Examination of the Normal Ear.—Siebenmann (*Arch. of. Otol.*, xxii, 1) summarizes the results of his work as follows: 1. The healthy ear in youth possesses a hearing distance of from twenty-five to twenty-six metres for whispered numbers, and of at least fifteen metres for Politzer's acoumeter. 2. Schwabach's test with the fork A reveals considerable differences in the duration of tone perception even in perfectly normal ears. 3. In Weber's test the fork is heard louder in one ear in one eighth of the normal cases tested. 4. Rinné's test with the Bezold-Katsch fork A gives in normal cases a positive result, + forty-eight seconds being the average. 5. The upper tone limit varies little in cases where the hearing is normal. It lies between *ut* 9 and *mi* 9, as determined with König's rods. With Galton's whistle the range is within 0·6 of the minor division of the particular note which represents the limit. 6. The Bezold-Katsch fork C^{-1} is perceived in all cases where the hearing is normal for about sixteen seconds, the fork being struck a medium blow. 7. Aspiration of the tympanic cavity shortens the duration of perception of the fork A both by air and bone conduction. 8. Valsalvian inflation diminishes air conduction for the fork A, and usually increases bone conduction. 9. Under the influence of Valsalvian inflation the upper tone limit is usually raised; frequently also the perception of the highest scale is rendered more acute; less frequently the pitch of the middle notes of the scale is altered. Aspiration, on the other hand, either does not influence the upper tone limit at all, or lowers it somewhat. 10. Air conduction for the fork C^{-1} is diminished both by auto-inflation and aspiration. In isolated cases the lower tone limit is raised from C^{-1} to Des^{-1}. 11. Increased tension of the annular ligament of the stapes through direct pressure upon the stapes augments bone conduction. 12. Tamponing the niches of both the labyrinthine windows does not influence the perception of high notes.

Results of the Functional Examination in Cases of Pure Catarrh of the Eustachian Tubes.—Siebenmann (*Arch. of Otol.*, xxii, 1) gives the results of his work as follows: I. The test of bilateral tubal catarrh exhibits the following functional changes: 1. Diminution of air conduction. 2. Increase of bone conduction. 3. Localization of the tuning fork placed on the vertex upon the more affected side. 4. Shortening of Rinné's test, or its reversal to negative. 5. Elevation of the lower tone limit. 6. Reduction of the upper tone limit.

II. The first inflation does not notably influence either the increased bone conduction or the reduction of the upper tone limit; on the other hand, it improves in no small degree the diminished air conduction and the narrowing of the lower tone limit, without restoring them to their normal standard. After the air douche the hearing is increased out of all proportion to the increased bone conduction.

A Case of Unilateral Total Absence of the Labyrinth caused by Scarlatinous Otitis Intima.—Mygind (*Arch. of Otol.*, xx, 1) reports a case of this nature, in which the point of greatest pathological interest is the total absence of the labyrinth on the left side. The absence of the internal ear, which was so complete that no traces of the normal labyrinth cavities were to be found, seems to be a very rare pathological condition. It proves that the bone tissue, which is formed as the product of a post-fœtal otitis intima, is able to fill up the normal cavities of the labyrinth so thoroughly, and assume the appearance of the surrounding bone so completely, that every trace of the outlines of the original cavities disappears entirely.

Histology of Two Petrous Bones of a Girl completely Deaf from Scarlet Fever; Died of Purulent Meningitis.—Moos (*Arch. of Otol.*, xxii, 1) considers the following points of interest as the result of the terminal affection: 1. The recent purulent inflammation in the niches of both fenestræ. It is remarkable that the greatest portion of the mucous membrane of the labyrinth wall, transformed into epidermis, was not only free from any recent inflammation, but even without cell elements and any vessels to speak of. The epidermoidal integument certainly offered a great resistance to the invasion of micro-organisms from without. 2. The recent necrosis of the facial canal and the niche of the fenestra ovalis. 3. The bilateral necrosis of the cochlear capsule and the partial destruction of the osseous tissue in the scala tympani of the first whorl of the right cochlea. 4. The more or less extensive inflammation of both vestibular apparatus. 5. The destruction of the auditory nerves and a portion of the facial nerves by suppuration and hæmorrhage. The almost symmetrical necrosis of both cochleæ from the porus acusticus internus to the labyrinth wall shows the possibility of a secondary bilateral otitis media starting from the labyrinth.

Functional Deafness and Destruction of the Membrana Tympani caused by an Electric Shock while using a Telephone.—Robinson (*Annals of Ophth. and Otol.*, January, 1893) reports a case of this nature in a man, aged forty-five years, who had the receiver of a telephone to his ear when a flash of lightning appeared, and he fell unconscious to the floor and remained so four minutes. On regaining consciousness he had very severe pain in the left ear and left face, left breast, arm, and leg. The intensity of the pain diminished in four hours. The senses of taste and smell were impaired. Field and acuity of vision normal. The left membrana tympani was almost totally destroyed, the edges of the remainder being ragged, uneven, and congested. There was no discharge, but the mucous membrane of the middle ear was swollen. Hearing for the watch = 0. A C tuning fork was heard half an inch by aerial and less well by bone conduction. Two months later he began to regain his hearing, and the membrana tympani was being rapidly restored. Thirteen months after the accident the condition of the ear was almost entirely normal.

Report of Six Cases of Excision of the Tympanic Membrane and Ossicles.—Hammond (*Annals of Ophth. and Otol.*, July, 1892) reports six cases of this nature, in some of which the diseased process was a sclerosing one, and in others a suppurative one. In the sclerotic cases the canals were thoroughly cleansed with hydrogen peroxide the evening before operating, and then closed with plugs of absorbent cotton. By this means the congestion which always follows the cleansing of the canal and membrane was avoided. After excision the parts were thoroughly cleansed once daily with a hot saturated solution of boric acid, and the canals kept closed with cotton. The nose and throat were at the same time treated with alkaline spray and astringent applications. In the suppurating cases the parts were cleansed with a hot saturated solution of boric acid just before operation. In all the cases where the incus was present, it was removed first by making an incision round the shank, when it was easily disarticulated by passing the looped curette between the articulation with the malleus, at the same time drawing it forward. Unless the incus is first removed, it will be drawn upward and backward after the malleus is detached from it, in which position it becomes difficult and even impossible to remove, and makes the danger of mastoid inflammation much greater from the position it takes at the opening of the mastoid cells into the bony canal.

The Bougie as a Means of Treatment in Diseases of the Middle Ear.—Harris (*Annals of Ophth. and Otol.*, July, 1892) thinks that physicians have become timorous in their employment of the bougie, partly owing to the unsatisfactory material of which it is made, and partly to lack of knowledge as to its method of introduction. A suitable material is celluloid, introduced by Urbantschitsch. The bougies should be six to eight inches long, bulbed at each end, and of six sizes, graded according to Charrière's scales. These bougies are very durable, and having bulbous heads at both ends are really two bougies in one. In introducing them, care should be taken to avoid violence, and strict antiseptic precautions should be observed. A common source of error is found in the lodgment of the catheter in the fossa of Rosenmüller instead of in the pharyngeal opening of the tube. If the mouth of the tube is large, an indistinct sound will be perceived with the diagnostic tube which can easily deceive one into thinking the instrument is in place; the bulb of the bougie, however, will at once encounter a firm obstruction, or, if any force is exerted, the bougie may progress, but will be bent.

An Aural Reflex.—Maloney (*Annals of Ophth. and Otol.*, October, 1892) has noticed on a number of occasions in different pianists forced efforts at expiration. In one instance, by placing three or four flat pledgets of cotton in the auditory canals with a space between each, so that a low voice could not be heard, and the performer being requested to play by signs, there was not the slightest sign of forced expiration. This test afforded proof that it was not due to tactile sense, but was a true auditory antecedent effect. Maloney thinks that the phenomenon is due to irritation of the tensor tympani nerve, and is reflected to the vagus through the otic ganglion, thence to the non-striated muscle of the entire bronchial system, which offers resistance to increased pressure within the air-passages as in forced expiration.

The Ear of Man and the Organ of Corti.—Maloney (*Annals of Ophth. and Otol.*, April, 1893) believes that increase and decrease of resistance or pressure is the most potent factor in audition, in contradistinction to mass vibration through or individual excursions upon the part of the ossicula. The increased or diminished pressure upon the perilymph caused by corresponding pressure of the foot-plate of the stapes through the oval window finds its compensation in the bulging inward instead of outward of the round window. The telephone performs the function of the human ear, and is an analogue because its function is a scientific truth. The nerves in the internal ear, like nerve-fibers elsewhere in the body, are entirely surrounded and incapable of vibrating as piano strings. While the ear has strings representing seven octaves and a third, it is impossible to get a semblance of reproduction of either composite or other tones from impact of sound waves on them; each string will only respond to its fundamental.

Otitic Brain Disease; its Varieties, Diagnosis, Prognosis, and Treatment.—Knapp (*Arch. of Otol.*, xxii, 2) considers it difficult to recognize when meningeal irritation passes over into true meningeal inflammation. As soon as in the course of otitis media, with its manifold symptoms, the headache becomes persistent, is followed by attacks of nausea and vomiting, dizziness, drowsiness, delirium, or stupor, at first acceleration and later retardation of pulse and rise of temperature, dry tongue, thirst, and constipation, we may be sure that meningitis has begun or is fully developed. The lethal issue is commonly preceded by spasms in the extremities and coma.

The Hearing Power in Deaf-mutes; being the Results of the Examination of One Hundred and Seventy-five Deaf-mute Children.—Love (*Arch. of Otol.*, xx, 2) draws the following conclusions from his observations: 1. Total deafness is very rare among deaf-mutes. For aerial sounds it is not greater than seven or eight per cent., and for bone-conduction sounds even less. 2. Hearing for speech is rather common. It exists to a utilizable extent in twenty-five or twenty-seven per cent. of deaf-mutes, and from ten to fifteen per cent. are only semi-mute. Under the finger system of teaching these semi-mutes become rapidly deafer, and soon totally dumb. The oral system may do something to prevent this, but it can only be properly dealt with by the acoustic method. 3. Cranial conduction exists in almost all cases, and a large vibrating tuning fork is almost always heard in this way. It is also heard in the majority of cases by aerial conduction. In only a small number of cases can a watch or Politzer's acoumeter be heard.

The Propagation of Affections of the Tympanum through the Carotid Canal into the Cerebral Cavity.—Körner (*Arch. of Otol.*, xxii, 2) states that even in simple suppurative inflammation of the mucous membrane of the middle ear purulent exudation has been found in the carotid canal as well as purulent infiltration of the adventitia of the carotid artery. If the osseous wall of the canal is destroyed, osseous pus, of course, reaches the canal and surrounds the lymph vessels and venous plexus. When these lymph vessels are surrounded by pus they may become inflamed and filled with thrombi. The venous plexus connected with the cavernous sinus may also be affected by the presence of pus in the carotid canal, and this may be propagated into the lateral sinus. When pus is retained in the tympanum with pyæmic symptoms, simultaneous paralysis of the abducens and bilateral papillitis have been observed. Erosion of the carotid wall and fatal hæmorrhages have also been reported. Tuberculosis may also be propagated from the tympanum along the vessels of the pia. Cerebral embolism has also been known to occur in consequence of thrombosis of the carotid artery in purulent otitis media and caries of the temporal bone.

A Case of Otitis Media Purulenta with Caries of the Mastoid Process due to Caries of the Second Molar Tooth.—Schwartz (*Arch. of Otol.*, xxii, 2) reports a case of this kind in a young man aged twenty-one years. The caries was transmitted to the upper jaw, whence the fistula occurred in the hard palate, and this was readily closed after the removal of the tooth. Thence the poison affected the periosteum and simultaneously the mucous membrane on the left nasal floor. The periostitis extended from this region through the Eustachian tube into the tympanum and osseous portion of the external meatus, and formed a circumscribed and hemispherical infiltration, corresponding with the tympanic opening of the Eustachian tube, which at first resembled a genuine exostosis.

The Clinical Signs of Affections of the Auditory Nerve.—Gradenigo (*Arch. of Otol.*, xxii, 2) notes the following clinical characteristics: 1. Diminution of the acuteness of hearing demonstrated by examination with tuning forks, especially with forks of middle register. Acuteness of hearing for high tones diminishes the earliest. The functional defect for middle tones increases in some cases to a complete disappearance of perception for some of these tones (for example, c^1). 2. Excessive functional exhaustibility to a marked degree. It is often so considerable that the results of the examinations by the different methods become so essentially modified that it is impossible to form an accurate conclusion as to the amount of hearing power present. The best way to study this functional exhaustibility is by means of an instrument modeled on a telephone audiometer. First determine the least intensity of tone that can be perceived; then expose the ear for a minute or two to the greatest intensity of the same tone which can be obtained from the instrument; then reduce the tone quickly to the minimum intensity heard in the beginning. The perception for this low intensity either ceases for several seconds or is entirely lost. After establishing the minimum intensity that can be perceived the ear is then exposed to the action of that tone. If the functional exhaustibility is considerable, the patient, after a few seconds, ceases to perceive it. In order to renew the perception it is necessary that the intensity of the tone be progressively increased from time to time. In some isolated cases it is possible to recognize that the functional exhaustibility precedes a temporary increase of the power of hearing.

Removal of the Stapes.—Blake (*Arch. of Otol.*, xxii, 2) here describes the modification of the first stage of the operation, that of incision of the membrana tympani, in reference both to the manner of employing the local anæsthetic and of making the cut. The strength of the cocaine solution is reduced to two per cent. The introduction of the solution through the Eustachian catheter is replaced by simple instillation of a few drops of a two-per-cent. solution in the nostril of the side to be operated upon, the head being inclined backward toward the corresponding side, or by a preliminary incision in the membrana tympani, and the solution then dropped through the cut. The incision procedure is divided into two parts, the first consisting in the opening already described, beginning at the round window and following the periphery to the short process of the malleus; the second beginning behind and half-way down the length of the manubrium, and being carried upward to meet the termination of the first cut, the intratympanic steps of the operation remaining the same as previously described. One of the notable points in some of these cases is the evident improvement in hearing by bone conduction as the result of the removal of a fixation obstacle, which impaired the intralabyrinthine sound transmission in accordance with a law governing the propagation of sonorous vibrations in fluid in inclosed spaces; and the occurrence of the vertigo coincidently with the outflow of fluid, presumably labyrinthine, would permit at least the inference that the vertigo was the result of a change in a fixation condition to which the parts had become accustomed, and that the release from supporting pressure consequent on the outflow of the labyrinthine fluid was accompanied by a congestion in the semicircular canals giving rise to those symptoms of general vertigo which the patient experienced.

Opening the Drum Cavity by Kuester's Method.—Maurel (*Rev. de laryng. et d'otol.*, March 1, 1893) describes Küster's operation of removing partially or wholly the posterior-superior wall of the bony auditory canal, and then the external wall of the attic. He makes an incision behind the line of insertion of the concha. The soft parts are separated as far as the periosteum, which is then dissected free and pushed backward. The membranous or cartilaginous portion of the external auditory canal is then detached from its posterior and superior insertion, and is turned forward and downward with the concha. The mastoid apophysis and the bony margin of the postero-superior wall of the canal being exposed, search must be made for fistulous orifices or carious portions, and, if found, they must be enlarged and their contents, with all carious bone, must be removed. If the lesions are limited to the external part of the canal, the parts must be carefully curetted. The mastoid antrum is then opened by removing entirely its posterior, external, and inferior walls, and the tympanic cavity is thus directly opened.

The Microbes of the Ear.—Martha (*Ann. des mal. de l'oreille et du larynx*, July, 1893) has examined the secretions from the ears of fifty patients, and found in twenty seven cases the staphylococcus, in eighteen cases the streptococcus, in two cases the *Bacillus pyocyanicus*, and in many cases the tetragonus and versicolor. In no case did he discover the pneumococcus. Many of these microbes were found adherent to the aural specula, even those which had been apparently thoroughly cleansed, but which had not been passed through and exposed to the flame of a lamp. Hence he emphasizes the necessity of complete antisepsis of the instruments and medicaments employed in the examination and treatment of cases.

Deafness in Retarded Tertiary Syphilis, Acquired or Hereditary.—Delie (*Ann. des mal. de l'oreille et du larynx*, August, 1893) gives the pathognomonic symptoms of aural disease due to retarded syphilis as follows: 1. Sudden appearance of vertigo with loss of equilibrium. 2. Tinnitus and vomiting. 3. Complete deafness, generally bilateral. All the symptoms gradually improve and finally disappear, except the deafness, which remains absolute and incurable. If the patient has previously had some affection of the middle ear, the deafness becomes suddenly aggravated, and in a few hours or days becomes absolute; the tuning fork can no longer be heard to vibrate when placed in contact with the bones of the skull. Usually this sudden and absolute deafness occurs in the children of syphilitic parents without the slightest premonitory symptom; but these children will be found to have had changes in the incisor teeth and usually some form of eye trouble. In acquired syphilis the deafness may appear toward the end of the second period (one or two years after the chancre), or in the course of the third period (after the fourth year). Generally, however, when the hearing is intact in a syphilitic subject, sudden deafness with Ménière's symptoms appears late in the tertiary period, ten to fifteen years after infection. In hereditary syphilis the critical period is at the beginning of puberty. Girls are more frequently attacked by sudden deafness than boys.

Three Cases of Unintentional Opening of the Lateral Sinus.—Sheppard (*Arch. of Otol.*, xxii, 3) reports three cases. The interesting features of the first case were: 1. The relatively slight symptoms preceding and indicating operation, compared with the enormous destruction of tissue within the mastoid, involving even a large portion of the inner wall, as well as the absence of any serious consequences from the double puncture into the lateral sinus and into the brain cavity. 2. The severe chill on the fourth day after operation, preceded by no unpleasant symptoms and followed by an uninterrupted recovery. 3. The attacks of vertigo with loss of consciousness, irregular respiration, and slow pulse during the month following the final healing. In the absence of a bony wall between the mastoid and cranial cavities, could the cicatricial contraction have caused sufficiently increased intracranial tension to account for the symptoms?

In the second case the prominent features were: 1. The manner in which the sinus was apparently opened—that is, the flow of blood came after removing a pledget of cotton used for drying out the cavity. It seems probable that with the curette a piece of necrotic bone wounded the sinus wall, but was not sufficiently displaced to allow of hæmorrhage until caught in the cotton and removed. 2. The entire absence of disturbing symptoms, with the relatively short time required for entire healing of the wound.

In the third case the mastoid suppuration occurred on the side upon which there was apparently a lesser grade of inflammation in the tympanic cavity. The sinus here was probably opened by a splinter from the inner plate caused by using the curette, the splinter penetrating the sinus wall.

Short Description of the Temporal Bones of Deaf-mutes belonging to the Pathological Museum of the Copenhagen University.—Mygind (*Arch. of Otol.*, xxii, 3) found in this large collection of preparations that the osseous parts of the auditory organs in more than one half of the cases were not the seat of any abnormity that could be demonstrated. As far as the nature of the abnormities was concerned, the morbid changes found in the deaf-born were only exceptionally the expression of malformations or deformities caused by arrest of development. In the majority of cases they were the result of fœtal inflammatory processes, which caused a partial destruction of the internal osseous structure of the labyrinth and in many cases the consequent formation of osseous tissue. The comparatively frequent abnormity consisting in destruction of the upper tarus of the cochlea, thus causing a large cavity in the top of the organ without the normal osseous contents, while the lower parts of the cochlea were completely or almost completely preserved, was probably the result of a destructive fœtal inflammatory process. The examination of the temporal bones of deaf-mutes whose deafness had been acquired after birth proved that the pathological changes generally consisted in the deposit of osseous matter in the normal cavities of the labyrinth. The osseous mass closing the cavity was often not to be distinguished from the surrounding bone of the pars petrosa either in color or consistence, while in some it was clearly distinguishable, owing partly to its greater whiteness, partly to its firmer, more ivory-like consistence.

New Inventions, etc.

NEW INSTRUMENTS.

By J. S. Wight, M. D.,
Professor of Operative and Clinical Surgery at the Long Island College Hospital, Brooklyn, N. Y.

I. *The Hook-eye Needle.*—This needle is split at the eye end: one piece is bent into a hook to make the eye; the other piece projects beyond the hook to catch the thread and guide it into the hook-eye. The continuity of the thread is placed on the projection and carried into the hook-eye in an instant. The needle is pushed through the flap, for instance, from within outward, and is then instantly rethreaded and pushed through the other flap, also from within outward. The shaft of the needle is a cylinder, but the point is flattened, and has a sharp beveled point resembling that of the Hagedorn needle. In Fig. 1, *a* represents a straight needle, having the point made quadrangular. This point penetrates more readily than a "round one," and it does not cut so much as a "triangular one"; *b* represents a short, strong needle with a curved point, intended for gynæcological operations; *c* represents a large curved needle for the use of the general surgeon. I have used this needle in a number of operations—amputations, laparotomies, wounds, etc. *It facilitates work and saves time.*

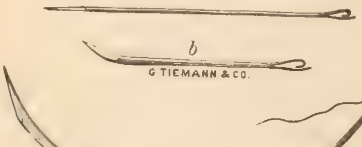

Fig. 1.

II. *The Forceps Aneurysm Needle.*—This instrument is a modification of my artery forceps. The parts of this instrument are shown in Fig. 2: *a* is a needle point having an eye; *b* is simply an eye point; *c* is a mouse-tooth point. The entire instrument is represented as carrying a ligature. The Tiemann catch for the forceps is an essential part of the mechanism. This catch makes the fulcrum. Side handles are so arranged that they can be compressed by the thumb and fingers of the surgeon, opening the ends of the jaws of the forceps. The curved jaws of the forceps are carried under the artery in the usual way, the thumb-pieces are compressed, and the ligature is put into the eye, or between the ends of the jaws, and then drawn under the artery, when it is tied. I have used the forceps aneurysm needle in a case of gunshot wound of the common carotid and the internal jugular; in ligating the common carotid for arrest of hæmorrhage in cancer of the neck; in case of large varicose internal saphenous vein; in removal of omentum in strangulated hernia; in excision of the testicle. This aneurysm needle can be used as hæmostatic forceps. These instruments are made by George Tiemann & Co., 107 Park Row, New York.

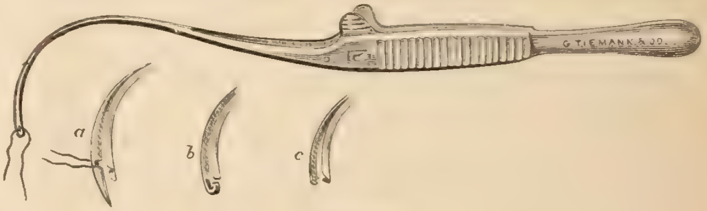

Fig. 2.

Miscellany.

Rigor Mortis.—At a recent meeting of the Paris *Académie des sciences*, a report of which is published in the *Union médicale* for April 28th, a note on this subject by M. J. Tissot was presented by M. Chauveau. The author remarks that two opposite opinions are held by physiologists as to the nature of cadaveric rigidity. Some, such as Brücke and Kühne, maintain that it is due to a chemical phenomenon, coagulation of the myosin. Others, such as Nysten and Brown-Séquard, look upon it as a final muscular contraction, that is to say, a physiological occurrence. The only facts, M. Tissot says, that warrant the latter hypothesis are the analogies of cadaveric rigidity with muscular contraction and the observations published by Brown-Séquard. None of the essential vital manifestations have yet been observed in the rigid muscles. Experiments made by the author himself have shown the following results: 1. Very often the rigid muscles remain capable of electrical excitation during a variable period in the early portion of the rigidity and even when it is completely established. This persistence of excitability is almost constant whenever the rigidity has come on rapidly. 2. The rigid muscles that have lost their electrical excitability may preserve their mechanical excitability for a long time. 3. Rigid muscles that have lost both electrical and mechanical excitability still respond to chemical stimuli. Contrary to what most physiologists have said, the sensitiveness of the muscles to chemical agents, such as chloroform, ammonia, etc., persists much longer than their mechanical excitability, and is always the last to be lost. 4. While the electrical excitability goes on decreasing, the excitability in response to certain agents increases in inverse ratio, and attains its maximum when the electrical excitability is disappearing and at the moment when the muscles are about to enter upon the state of rigidity. For other chemical agents the excitability decreases regularly without having attained the maximum. It is futile to seek to ascertain from the action of one or two agents, as many physiologists have done, the behavior of muscles toward chemical excitants in general, and it may be said that muscle behaves differently with each of them. 5. Tetanized and fatigued muscles present the same exaggerated sensibility to like chemical excitants as rigid muscles do. The same is observed in muscles the vessels of which have been tied for a certain time and in muscles subjected to causes of impairment, such as contact with the air, heat, drying, etc. 6. The contraction produced in a rigid muscle by an excitant, even by a small amount of vapor, such as that of chloroform or ammonia, is accompanied by a current in the muscle. It is accompanied also by the disengagement of heat, as in normal muscular contraction. 7. Rigid muscles hung up in the air absorb oxygen and give off carbonic acid. 8. In two cases the author has been able to cause the appearance of rigidity in the frog's gastrocnemius by a single intense electrical excitation a little before the instant when the muscle loses its electrical excitability; he has not yet been able to ascertain the conditions under which this phenomenon is produced.

Topical Applications of Guaiacol in Diseases of the Throat.—The New York correspondent of the *Journal des praticiens* summarizes the experience of a number of Chicago physicians in the use of guaiacol applied to the mucous membrane of the throat. Dr. Ingals is cited as thinking highly of these applications in acute affections of the throat. Dr. Cotton is said to have observed an immediate and considerable amelioration in ninety-four per cent. of the patients so treated. Dr. Rhodes is said to entertain an equally high opinion of the remedy. He has even employed it successfully in erysipelas of the face. Dr. Corwin has reported fifteen cases of amygdalitis treated successfully with applications of guaiacol. In every instance amelioration followed the first application of the remedy. Dr. Raymond has employed pure guaiacol. A fifty-per-cent. solution in oil of sweet almonds may also be applied in the form of a spray, but this procedure is said to be less effective than painting with pure guaiacol. Sometimes the application is disagreeable and is accompanied with rather a brisk sensation of burning; but this is of short duration, commonly not more than from a minute to five minutes. Occasionally, however, the disagreeable sensations are prolonged for several hours. It may be said that painting with guaiacol is no more painful than the application of a good many remedies which are in ordinary use, and it possesses the advantage over them of being curative and very often abortive. It might be thought, the correspondent continues, that the previous application of a ten-per-cent. solution of cocaine would mitigate the sensation of burning caused by the guaiacol; on the contrary, this procedure seems to render the burning more painful. In making the applications a tampon of absorbent cotton saturated with pure guaiacol is swept over the whole surface of the tonsil, great care being taken that none of it drops into the larynx. In every case it has been observed that the temperature fell to the normal point or within a degree of it. Often two applications are sufficient to abort the disease. In patients who had been unable to swallow without great pain guaiacol has often made swallowing easy.

Acute Poisoning with Therapeutic Doses of Creosote.—In the *Centralblatt für innere Medicin* for May 5th Dr. Zawadzski reports a case in which a woman forty-two years old was ordered creosote in doses of six drops three times a day, in milk. After she had taken three doses symptoms of poisoning showed themselves, including those of high irritation of the gastro-intestinal canal, anæsthesia, and partial paralysis of the soft palate and of the vocal bands, persistent burning in the mucous membrane of the mouth and pharynx, albuminuria, signs of weakness of the heart, and especially the exhalation of the odor of creosote from the mouth. Death took place in the course of four days, and the author thinks it was owing to an idiosyncrasy that made the patient abnormally sensitive to creosote. He expresses the opinion that we should avoid using creosote pure or in strong solutions, and especially that creosote should not be ordered to be taken in milk, since it is insoluble in milk and, when so prescribed, acts as if it were undiluted. Moreover, he thinks that not more than one or two drops at a dose should be ordered to begin with, and that this dose should be increased gradually.

Diffuse Hypertrophy of the Breasts.—The *Deutsche Medizinal-Zeitung* for May 3d gives an abstract from a Hungarian journal of a case of this sort related by Dr. Herczel. The patient, twenty-nine years old, was in the fourth month of pregnancy. The hypertrophy had existed for six weeks. It was so great that when she sat down the breasts rested on the thighs. The consistence of the organs was that of a breast during lactation, without any hard or fluctuating parts. An additional feature of interest in this case was that there was an accessory breast, half as large again as one's fist, situated in the axilla. The breasts were not painful on pressure, but there was pain in the left breast when the patient lay down. The author remarks that it is well known that hypertrophy of the breasts is apt to show itself at puberty or during pregnancy, and he says that it is very important to distinguish between the two cases, because in the first amputation may become necessary, whereas in the second the breasts always recover their natural size after delivery.

The Paris Faculty of Medicine.—The *Progrès médical* announces that M. Germain Sée, professor of clinical medicine, has been retired at his own request on account of the state of his health, and that M. Chantemesse, *agrégé*, has been chosen to take his place until the 30th of October. The *Wiener medicinische Wochenschrift* states that Dr. Malassez has been nominated to succeed Professor Charcot in the chair of pathological anatomy.

The University of Vienna.—The *Wiener medicinische Wochenschrift* states that Dr. Joseph Gruber and Dr. Politzer, heretofore extraordinary professors of otology, and also Dr. Karl Stoerke, extraordinary professor of laryngology, have been made ordinary professors.

The Treatment of Epistaxis.—The May number of the *Glasgow Medical Journal* contains a paper entitled Notes and Observations on Certain Forms of Epistaxis, by Dr. Robert Fullerton, read at a meeting of the Glasgow Southern Medical Society.' In regard to the treatment of bleeding from the nose, the author thinks that, in young and plethoric persons, also where there is any likelihood of an apoplectic seizure, some hesitation should be felt as to stopping the bleeding. A careful examination of the nasal cavities should be made in every case, if possible, especially if the hæmorrhage has been profuse or recurrent. The causes may be local or constitutional, and in the treatment constitutional influences should not be lost sight of. It is important to remember that in most cases the bleeding point is situated anteriorly, so that the flow may easily be checked by plugging from the front. In most cases the hæmorrhage may be controlled temporarily by the patient's grasping the anterior cartilaginous portion of the nose firmly. It should then be plugged from the front, preferably with a long strip of iodoform gauze, which is to be pushed carefully upward, backward, and downward with a probe or a sinus forceps, layer upon layer, until the cavity is thoroughly packed. If this is done thoroughly, the cases are very few in which anything further is required for the time being. The advantages of using the iodoform-gauze strip are that the parts remain aseptic for a considerable time, and that the continuous character of the packing permits of its easy removal. The plug should not remain in for more than forty-eight hours, and in withdrawing it the utmost care should be taken not to displace any clot that may have formed. As a rule, on removing the plug, the surface of the nasal cavity will be found fairly free from blood; but any blood that obscures the parts can be removed by spraying, or wiped off with cotton wool on a probe. After this has been done, an effort should be made to discover the bleeding point with the aid of a good light and with the nostril well dilated. Particular attention should be directed to a careful examination of the sæptum with a probe, to see if bleeding can anywhere be elicited. Any clot or suspicious mark should be examined in the same way, and temporary pressure applied to it if necessary as a preliminary to effecting a radical cure. For this purpose the author has used nitrate of silver and chromic acid; but, while each has acted satisfactorily for a time, neither has been permanent in its effect. On the other hand, the galvanic cautery has acted perfectly in every case. Before using this, it is desirable to apply a five-per-cent. or a ten per-cent. solution of cocaine to the spot to be touched. The cautery should be passed slowly down through the soft tissues at a red heat, and should be kept glowing until it is again clear of the parts. If this last point is not attended to, the tissue is apt to adhere to the cautery, so that on detachment of the clot bleeding takes place anew. If a galvanic cautery is not at hand, the end of a probe heated in a spirit lamp may be used, and the author thinks it would be more efficient than either chromic acid or nitrate of silver. In plugging, cotton-wool may be used, with or without the addition of a styptic. Perchloride of iron is an effective but most unpleasant application. A four-per-cent. solution of antipyrine is said to act well, but the author thinks that styptics are unnecessary, provided pressure by means of plugging is carried out carefully. Where the hæmorrhage is moderate, a five-per-cent. solution of cocaine, sprayed or sniffed, acts well and quickly. Where there is only slight capillary oozing, a preparation of hamamelis may be applied several times a day in the form of spraying. Under such circumstances also an ointment of menthol and vaseline, which the patient can sniff up, generally acts satisfactorily.

Fragmentary Bone-grafting.—In the *Province médicale* for April 28th there is an article on this subject by M. Vallas in which he remarks that satisfactory results from bone-grafting have not yet been realized, and the reason, he thinks, lies in the fact that too much has been expected from it. In order to supply the loss of bony substance, grafting may serve as a useful adjuvant to the physiological process of ossification; it can not be the principal factor or the sole agent. The observations which have been published up to the present time go to support this theory. Dr. Patterson, of Glasgow (*Lancet*, 1878), in treating a case of pseudarthrosis of the forearm, employed massive and heteroplastic bone-grafting. He placed a piece of dog's bone between the two fragments, and this seemed to become grafted and united at first, but twelve months afterward it was cast off in the form of a bony fragment of about half the size of the original graft. M. Ollier has observed the case of a young girl on whom he had grafted an osteo-periosteal strip a hundred and fourteen millimetres long in the tibia taken from the tibia of the opposite side. The wound healed without suppuration; but at the end of four months the greater part of the graft had been cast off. The edges were worn and jagged, and the periosteum alone had become grafted. Thus the massive graft had not united. The new bone which had been introduced into the organism might have been tolerated as an aseptic foreign body, but it would not succeed in setting up the nutritive interchange which constitutes the life that is characteristic of true grafting.

Fragmentary grafting has shown more satisfactory results. M. Poncet, of Lyons, has observed a case of total diaphyseal necrosis of the tibia. He sowed small fragments of a young goat's bone in the periosteal sheath. Some of these fragments were cast off, but others remained and were united in the bony masses of new production. It was observed that, in this case, the grafting had served only as an auxiliary procedure, for the periosteal sheath of the young patient, who had been attacked with acute osteomyelitis, was in full vigor and in a fair way to reproduce the old bone. The grafting had only hastened the work of normal ossification, not replaced it. In another case observed by Dr. Macewen (*Rev. de chirurgie*, 1882), the patient, a child three years old, had had acute diaphyseal necrosis of the humerus. The operation was not performed for a year, in order to cure the pseudarthrosis which had resulted from the absence of regeneration. Three times Dr. Macewen grafted fragments of bone in the fibrous cord which represented the periosteal sheath. He was fortunate enough to re-establish the continuity of the humerus. In summing up this case, in his *Traité des résections*, M. Ollier concludes from the examination of these facts and from his experiments on animals that grafting acts as a temporary aid in renewing the osteogenetic properties of a tissue capable of physiological ossification. Fragmentary bone-grafting is of assistance in hastening tardy consolidation or in filling bony cavities of which the spontaneous obliteration is slow in taking place. In the latter case especially, it is preferable to the employment of catgut or other foreign bodies which have been used for this purpose.

Symptomatic Treatment.—In an address on Influenza, introductory to a discussion of the subject in the Harveian Society of London (*Lancet*, April 28th), Dr. Samuel West said:

"The treatment of symptoms is often spoken of with some contempt—not, I think, by clinical physicians, who are not prepared to discard remedies because they can not explain their action. It is sufficient for them that experience proves the value of the drugs they use. It is true that we have so far no remedies which will kill disease germs in the body, and therefore directly cure any germ disease; but the germs produce poisons, and these, by their action on the body, in all probability cause the symptoms of the disease. These poisons we may be able to neutralize or destroy, if we can not kill the germ. What the poisonous substances produced are we do not know, and for antidotes to them we are, and have long been, groping, in great darkness, it is true; yet I think it not unlikely, when these poisons are isolated and investigated outside the body, that among the old and once-trusted remedies, which empiricism has discovered and fashion discarded, will be found some of the true antidotes we want, and thus the symptomatic treatment of disease, now regarded as so unscientific and irrational, be discovered to rest upon a truly scientific foundation."

The Radical Cure of Epithelial Cancer of the Skin.—According to the *Mercredi médical*, Dr. Gavino related at the recent International Medical Congress, held at Rome, a method of treatment by which he had succeeded in curing epithelial cancer of the skin. He applies a preparation consisting of ten parts of fuming nitric acid and four parts of bichloride of mercury, brought to the consistence of syrup by the addition of bibulous paper. This is applied on a bit of cotton. At the end of ten or twelve days the cauterization is repeated; this is enough to cause the largest tumor to drop off. Perfect cicatrization is rapid. The author states that up to the present time he has cured all his patients, but the account does not say how many of them there have been.

Lichen and its Varieties.—In the April number of the *British Journal of Dermatology* there is a paper that was read in the Section in Dermatology of the Eleventh International Medical Congress by Mr. Malcolm Morris. Mr. Morris summarizes his paper substantially as follows: Lichen is not a disease, but a typical form of lesion. The name lichen should be reserved for what Erasmus Wilson described as lichen planus, which is the same as Hebra's lichen rubra. Kaposi's lichen rubra acuminatus is the same thing as the pityriasis rubra pilaris of Devergie and Besnier. Lichen planus is probably due to a variety of factors, but we are still almost wholly in the dark as to its pathogenesis.

An Antiseptic and Anæsthetic Liquid.—At a recent meeting of the *Société des sciences médicales de Lyon*, reported in the *Mercredi médical* for May 2d, M. Mayet gave the formula of an antiseptic and anæsthetic liquid to be employed on tampons in various affections of the uterus and in dressing small wounds. The formula called for two hundred parts of sterilized vaseline, two parts of cocaine, and eight parts of oleic acid. It was stated that, inasmuch as there was danger of the absorption of the cocaine, this dressing should not be applied to extensive wounds.

Carbolic Acid and Chloroform in the Treatment of Typhoid Fever.—In the *British Medical Journal* for April 28th Surgeon-lieutenant-colonel Quill, of the medical staff of the British army, recommends a mixture of thirty-six minims of Calvert's pure carbolic acid, two fluidrachms of spirit of chloroform, three fluidrachms of compound tincture of cardamom, two fluidounces of syrup of hemidesmus, and enough chloroform water to make twelve fluidounces. A fluidounce of this mixture, with an equal quantity of ice water, is to be taken every two hours. The author says it is important to continue the use of the mixture in from three to five doses daily for at least a week after the temperature has fallen to the normal point; this renders the patient less liable to a relapse. Surgeon Quill states that during the past year he has treated with this mixture all the cases of typhoid fever that have come under his care, and in every case perfect recovery has followed without the occurrence of any symptom calculated to cause anxiety; but he does not state how many he has had. He has observed the following effects of the use of carbolic acid and chloroform: 1. A reduction of the average duration of the fever. 2. A continuous depression of the febrile temperature. 3. Early cleansing of the tongue, which was rarely observed to be dry, and then only for the time being. 4. An almost complete deodorization of the stools. 5. Entire absence of abdominal distention. 6. Checking of the tendency to diarrhœa. 7. Preservation of the patient's intellectual clearness, with no tendency to stupor or delirium. 8. The non-occurrence of any kind of secondary complication. 9. Rarity of relapses and their brief duration when they occurred. 10. The invariably satisfactory assimilation of food. 11. Rapidity of convalescence.

Symphysiotomy.—In the *Gazette hebdomadaire de médecine et de chirurgie* for May 5th there is an exhaustive review of this procedure by M. Pinard, of the Paris Faculty of Medicine. He closes with the following conclusions: 1. Aseptic symphysiotomy is not a dangerous operation. 2. To be of service it should be complete, and the amount of separation of the two pubic bones should be proportionate to the degree of contraction of the pelvis. 3. The operation should not be attempted unless it has been calculated that a separation of seven centimetres will allow of the passage of the full-grown fœtal head. 4. Since separation of the pubic bones to a greater distance than seven centimetres may result in injury of the soft parts, it should be interdicted. 5. When a separation of seven centimetres does not suffice for the passage of the fœtal head, Porro's operation should be performed. 6. In cases of oblique oval pelvis, with synostosis of one of the sacro-iliac synchondroses, if the contraction does not permit of spontaneous delivery—and this can be ascertained only after labor has set in—we should perform Farabeuf's operation (separation at the ischio-pubic articulation), and for this we should be prepared at the outset. 7. In case labor is impeded by ankylosis of the coccyx, coccygotomy should be practiced.

The Relations of the Axillary Artery.—In the May number of the *Edinburgh Medical Journal* Mr. J. Ryland Whitaker criticises the ordinary text-book description of the relations of the axillary artery to the cords of the brachial plexus. He quotes the following description from Quain: "First part of the axillary artery.—The nerves of the brachial plexus are to the outer side, the external anterior thoracic nerve crosses in front, and the internal and posterior nerves pass behind. Second part.—The three cords of the brachial plexus are placed one on the outer side, the second behind, and the third to the outer side." From Ellis he quotes as follows: "First part.—On the acromial side lie the cords of the brachial plexus. Second part.—In this portion the cords lie around the vessel, one being outside, another inside, and the third behind the artery." Mr. Whitaker then goes on to remark that it will be seen at once that it is impossible for the inner cord of the brachial plexus to lie on the outer side of the first part of the axillary artery and on the inner side of the second part without having passed either behind or in front of the vessel, and this must be the case if the usual descriptions are correct. As a matter of fact, the inner cord of the brachial plexus passes behind the axillary artery to gain its inner aspect, so that the relations should be stated as follows: "The cords of the brachial plexus lie to the outer side of the first part of the axillary artery, and at the junction of the first with the second part the inner cord passes behind the vessel and gets to its inner side, so that in the second part of the course of the artery the cords of the brachial plexus lie, the outer cord to its outer side, the posterior cord behind, and the inner cord to its inner side."

Inflammatory Hypertrophy of the Breast in a Case of Gynæcomastia.—At the February meeting of the *Société des sciences médicales de Lyon*, reported in the *Lyon médical* for April 22d, M. Hassler gave a further account of the case of a subject of gynæcomastia whom he had shown at the November meeting. The patient was a soldier, twenty-three years old, affected with chronic mastitis, with enlargement of the axillary glands. Constitutional treatment with potassium iodide and local treatment by means of compression had been of no avail. The same was true of localized sweating produced by inunction with an ointment of pilocarpine, which in Mollière's practice had given very encouraging results in similar cases in women. The breast had been amputated, and the patient was now convalescent and about to resume military service. In about a month after the operation the axillary glands had ceased to be appreciable. The tumor had weighed nearly five ounces and a half, and presented macroscopically the characters of a very fatty mammary gland beset with hard kernels.

The Statistics of Surgical Anæsthesia.—In the *Journal des praticiens* for May 2d Dr. Gurlt, of Berlin, is cited as calling attention to the number of persons anæsthetized in the clinics in Germany. The total number for the year 1892 was 100,000, and for 1893, 151,000. The mortality in anæsthesia by chloroform was fourteen times as great as in that by ether. Among twenty-six thousand persons who were anæsthetized with ether only one died, but in one thousand nine hundred and twenty-four cases of chloroform anæsthetization the mortality was the same. Gurlt attributes the successful use of ether to the prudence exercised by surgeons, and to the employment of the gentle method, which is superior to the so-called asphyctic method, and to the use of the mask, which is almost universally adopted in Germany.

The Diurnal Limits of Muscular Power.—The devotees of early rising will find little consolation in the experiments on muscular work which are reported by Dr. Vaughan Harley in the *Journal of Physiology* for March. The work done during a uniform number of voluntary muscular contractions was measured by an ingenious apparatus, and the results proved that more work could be done in the afternoon than in the forenoon. The kinds of food taken, as well as the periods of digestion, were found to have a marked influence on voluntary muscular energy. A periodical diurnal rise and fall in the power of doing muscular work was noticed, however, which was irrespective of the influence of food. The muscles are weakest during the forenoon, the minimum amount of muscular power being found about nine o'clock in the morning. The muscles are strongest during the afternoon, the maximum strength being reached at about 3 P. M. A normal diurnal fall in the muscular power was found, usually occurring about 5.30 P. M. The approach of fatigue was, however, noticeably delayed by regular exercise, which also increased both the size and the power of the muscles.

The Preventive Treatment of Seasickness.—Chlorobrom, which is a solution of chloralamide and potassium bromide, is the latest remedy proposed for the motion-sickness so terrible to many ocean travelers and railway tourists. From the results of its use in three hundred cases reported by ships' surgeons in medical charge of steamers plying between Great Britain and the United States, Canada, India, Australia, and New Zealand, Dr. M. Charteris, professor of materia medica and therapeutics in the University of Glasgow, reiterates in the *Lancet* of April 21st that chlorobrom, judiciously taken, will prevent an attack of seasickness, or cut it short if it has already begun. He states, however, that no prophylactic benefit can be secured by the use of chlorobrom in long sea voyages unless, for two nights before embarkation, the passenger depletes the stomach and bowels by taking a cholagogue pill. Persons who dread the voyage will be helped by a previous dose of the solution. On board the vessel the diet should be spare and dry. No full meal should be indulged in, and soup, pastry, and sweets especially should be avoided, and a hypnotic dose of chlorobrom should be taken for three nights, a tablespoonful at a dose for women and a tablespoonful and a half for men. For short voyages, beginning about 10 P. M., the passenger should take one dose of the size mentioned and immediately go to bed. Immunity from seasickness is obtained in the great majority of persons if these directions are followed, but if they are not, the result will be that the chlorobrom will have no effect in arresting an attack of vomiting. Teaspoonful doses given every ten minutes until a tablespoonful or a tablespoonful and a half has been given, will, however, almost invariably check the retching and depression, which Dr. Charteris believes are due to irritation of the vomiting center in the medulla oblongata consequent upon the vomiting caused by the gastric disturbance due to the unusual amount and uniformity of motion.

The State Board of Medical Examiners of New Jersey.—A special meeting of the board for the examination of candidates desiring to practice medicine in the State will be held in the Capitol, at Trenton, on the third Tuesday of June (the 19th), *and it will be the last meeting for the examination of candidates held under the present medical law*, as the new law enacted at the recent session of the Legislature goes into effect on July 4, 1894. This new law requires all candidates to have a competent common-school education, to be graduates in medicine and surgery, which they shall have studied at least four years and upon which they shall have taken three full courses of lectures, before they can be admitted to the examination for a license, and then all will be subjected to the same examination; it also empowers the board to accept, in lieu of an examination, the certificates of other State examining and licensing boards having similar requirements.

The Various Forms of Blood Cells.—The classification of the corpuscles of normal human blood has been much expanded by Ehrlich, whose groupings are followed by Dr. W. S. Thayer in the *Johns Hopkins Hospital Reports*. The red corpuscles, the blood plates, and the colorless cells make three easily demonstrated kinds of corpuscles in human blood, but the colorless cells need to be subdivided into five varieties, according to their differing reactions to staining fluids. Lymphocytes are the small colorless cells approaching the red corpuscles in size, the body of the lymphocytes being filled with a large, round, deeply staining nucleus, while the protoplasm is represented by a small ring about the nucleus. Uninuclear leucocytes are larger cells, which have a relatively large amount of protoplasm. Transitional forms are those cells which have a similar appearance to the two foregoing varieties, but differ from them only by the nucleus showing certain indentations which may give to it the appearance of an hour-glass. Multinuclear neutrophiles are cells perhaps a trifle smaller than the large uninuclear elements, and having a single nucleus so irregular in shape that it may appear as several nuclei under a single focus of the microscope, thus forming a characteristic polymorphic nucleus, with a thick non-staining granulation. Eosinophiles usually have a polymorphous nucleus, and contain the larger and more refractive eosin-staining granules. The protoplasm of the lymphocytes usually takes a red-violet color with a triple staining, while that of the large uninuclear elements has but a slight affinity for coloring matters. There exist, however, in all human blood a number of uninuclear and some multinuclear elements, which have a protoplasm that remains entirely unstained, looking like a white spot or a small vacuole in the middle of the stained cell. Nucleated red blood cells, or normoblasts, are found in the bone-marrow. In pathological conditions there are many abnormal varieties of blood cells.

Original Communications.

THE OPERATIVE TREATMENT OF ACUTE SUPPURATIVE PERITONITIS.*

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NOT very long ago I was again in a position to operate for a general suppurative peritonitis in a dying patient whom I had not seen till then. I will not ventilate the question whether operative interference in this stage is justified or not. I think every surgeon has to settle this point for himself according to the existing circumstances. In this case I thought I had enough proof of perforation of a typhoid ulcer situated above the level of the umbilicus. Making the incision accordingly high up, I found an immense purulent accumulation pent up in the deep pocket below the right lobe of the liver, entirely shut off from the left and lower part of the abdomen by the distended bowels. After emptying it, it became evident that I had not found the starting-point of the inflammation. I then made the usual incision for appendicitis, and got to the seat of the trouble—a perforated appendix—during whose ablation the patient died. It was evident that the two cavities entered by the two incisions were not in communication with each other, and could not have been drained through one opening without breaking up considerable adhesions, or without unpacking the intestines. In fact, there was pus everywhere in the nooks and folds, the recesses and cavities, partially shut off by adhesions, partially free.

I do not maintain that this picture was anything unheard of; on the contrary, it is more or less the rule in such fargone peritonitic suppurations, and uncomfortably familiar to me. But once more the conviction came home to me that the present methods of wrestling with these formidable devastations are utterly inadequate, and that the record of almost absolute fatality will be broken only by the extraordinary coincidence of the most favorable circumstances, unless we can improve on our treatment. The same thought caused me to recommend a free incision from the ensiform process down to the symphysis, followed by lifting up the intestines so that they could be placed on the abdominal surface and be kept there until, by flushing and draining, the suppuration would come to a halt. While the principle appears to be correct, it is obvious that this plan can not work well in practice, for reasons which will become evident during further discussion. And, in fact, it was successful neither in a case I treated in this manner nor in the hands of some other gentlemen who informed me of their attempts. It was highly interesting to me to find, only a few days ago (in the *Ctrlbl. für Chirurgie*, No. 4, 1894), a similar plan reported on by two Swiss surgeons. They seemed to have made extensive bacteriological and pathological experiments to arrive at the very same device, adding, though, a kind of box in which the bowels are kept swimming. Their two cases, however, I am sorry to state, did not fare better than all others.

Confronted again, only a few weeks ago, with a case of the same unfortunate condition—an acute general suppurative peritonitis following appendicial peritonitis—I found myself wanting in a well-founded and settled plan of procedure. Of course the appendix was to be removed and the abdominal cavity flushed; in short, I had to do what for the present is considered the best thing. Still, I felt that I would not be able to rescue my patient by such means. I may state that he grew so hopelessly feeble during the preparations for the operation that it was abandoned. He died in an hour or so, and only a few hours after I had seen him for the first time. This, my last experience, caused me to go over the field anew, and to hunt once more for points that could be improved on. I was happy enough to get a sufficient opportunity to study the anatomical conditions, as much as pertains to the subject, by the kindness and valuable help of Professor Keiller, of the University of Texas, and the ready assistance of Dr. Flavin, and I will take the liberty to submit to your critical deliberation a survey of my ideas and a plan of surgical procedure based on the results of my investigation.

The disease, as generally accepted, kills by the effects of poisonous substances which either upset certain parts of the steering machinery (the so-called centers), or interfere with the metabolic processes in the tissues. Whatever may be the real cause of death, it is evident that either the production of the poisons must be stopped, or their absorption, or both. The production of the poison never takes place within the uninvaded peritoneal sac. The septic material always has to get in from one or the other abdominal or pelvic organ, or it is carried there by operative or nonoperative accidents. It is obvious, then, that the starting point has to be removed or excluded. The diseased appendix, or the decaying gall bladder or tube, has to be taken out, intestinal perforations have to be closed, free septic material must be washed out, and so on. This is too plain to require more discussion. Unfortunately, though, the seed, once sown out, is constantly reproduced. It is true the vast surface of the peritoneal pouch is only to some extent a favorable field for its growth. We know, from clinical and experimental experience, the power of the peritonæum to resist and overcome a large quantity of poisonous substances. It will absorb them, perhaps become thickened, so that it may form dense partitions; in short, it will defend the body to such an extent that it will, even for years, keep great quantities of suppurating fluid with its micro-organisms pent up, not allowing them to do fatal harm. And especially is the omentum instrumental in this function. But, of course, there is a limit to its ability to cope with the intruders. Their quantity and quality may be such as to frustrate the peritoneal power of defense. Likewise the patient's general condition may be such as to make the fight hopeless from the outset. I am satisfied, however, that, if nothing else should interfere, the peritonæum would in most cases come out victorious. What, then, is it that paralyzes, almost in all cases under consideration, its protective power? No doubt it is the constant inpour of new poison, even after the visible breaks are repaired, the decayed tissues or the effete substances removed. And these fresh invaders, after once a peritonitis has been established, come from the bowels. It is satisfactorily proved that the weakened and softened intestinal walls are readily pervaded by microbes which have their habitat there or have been accidentally carried there. Thus germs constantly enter the irritated and suppurative peritoneal pouch, and keep up or even increase the pathological process. A *circulus viciosus* is then established; the original infection of the serosa leads to the imbibition and softening of the bowel wall, and this in return permits the intra-intestinal germs to permigrate into the peritoneal cavity. The more they do it, the more peritonitis; the more of this, the more weakening again of the bowel walls, and so on. In addition, the early developing distention of the latter increases the pressure of the intestinal coils and of the peritoneal surfaces upon each other. The increase of the general pressure in the cavity drives the poisonous fluids more readily into the lymphatic apertures. But, outside of all this, the products of the poisonous substances taken up into the system are to a great extent excreted into the stomach and bowels, whence they are reabsorbed. They seem only then to acquire the full ability to destroy the vital functions of the body. This connex has been proved by experiments (Hitzig, Alt, and others) and by clinical experience. Now think of the enormous production of these toxines in a disease where the peritoneal surface is constantly engaged in producing pus, and think of the paralyzed condition of the bowels in which they must retain all the excreted masses, in order to understand the rôle the intestinal part plays in our disease. Perhaps many a case could be carried over the time of danger solely by attention to this one point.

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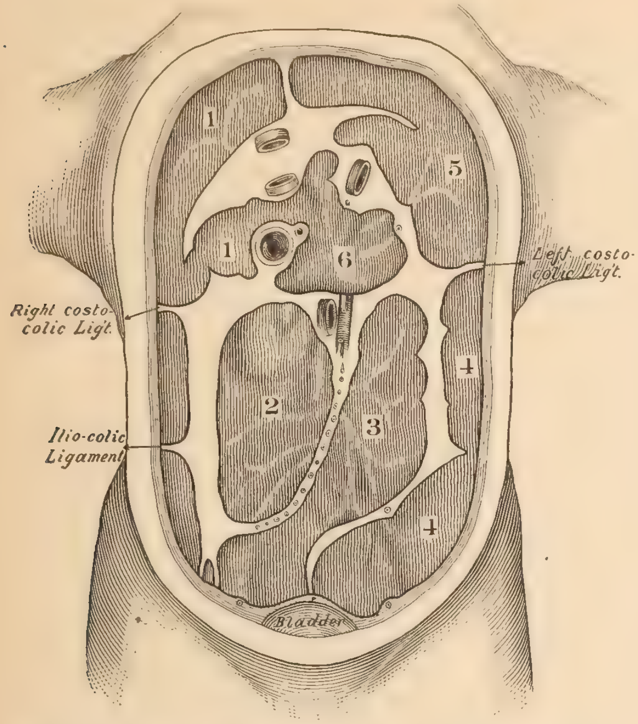
* Read before the Galveston County Medical Society, March 12, 1894.

It is obvious, then, that the bowels have to be freed of the distention, that they have to be cleared of the toxic substances and microbes, and that they have to be kept in the best possible condition for constant drainage. As you know, the present methods for this purpose are manifold. Some surgeons only puncture the bowels, of course a very insufficient manœuvre; others incise and wash them out, then close them again, which is more in the line of the laid-down principles. Only a very few (Henrotin) stitch the incision to the abdominal wall, so as to make a temporary fistula through which drainage and lavage can be established. They alone, in my opinion, do the right thing. The large intestine can be reached through the natural outlet by a long, large tube, which ought to have a number of wide openings, instead of only one or two at its end. Therefore, the small intestine ought to be incised; as it contains, together with the stomach, the bulk of the toxic secretions. At the same time, therefore, the stomach may be washed out, especially when vomiting has set in. The undeniable good effect of purgatives on incipient peritonitis is easily explained by their cleansing and disinfecting action, and proves the correctness of the views expressed. Similarly, the preparatory treatment for abdominal operations by purging and the administration of large doses of antiseptics, like bismuth, naphthol, etc., is based upon such principles.

The second indication, preventing or lessening absorption of the poisonous fluids, is met by a removal of them from the peritoneal cavity. The idea of checking suppuration by germicides has been given up, as experience has shown that they do more harm than good. Flushing is thus employed simply as a mechanical cleansing, and nothing but sterilized water, perhaps with the addition of table salt (0·6 per cent.), the so-called physiological salt solution, which, according to the experiments of a German investigator, may prevent the formation of adhesions, should be used. Now we are taught to direct the current into every nook and corner of the peritoneal sac through the abdominal incision, to run our fingers into each fold and interspace, to break adhesions that may have formed, and to keep up with the thorough cleansing until the water returns clear. I protest against such a method, because I think that this very breaking up and stirring and handling is the best way to distribute the pus, to cause new traumatism, and to produce new wound surfaces, and thereby open new channels for the entrance of the poison—exactly what we try to avoid. The occasional experience of a rapid general sepsis following smaller operations on infected organs like, for instance, the womb, should teach us the dangers of such undertakings. I am perfectly satisfied that such interference in general peritonitis has more often contributed to the rapidity of the fatal end than delayed it. The formation of adhesions is one of the most important natural attempts at cure, and I think it is better to let even large closed pus pockets alone for the time being than to add that one straw to the camel's back, when nothing but keeping the patient alive should be aimed at. We know that such pockets may persist even for years. They are to be attended to later on. Therefore, I would put it down for my rule not to use the fingers more than is necessary, to gently insert the nozzle of the syringe into freely accessible folds and interspaces. Of course, such a flushing will not be very exhaustive, but I will explain presently how we can greatly increase its efficacy. The rule, however, should be kept in mind that every atom of unnecessary wounding and handling of peritoneal tissues should be avoided.

From anatomical reasons we have to expect accumulations of purulent fluids in front, between the anterior surface of the intestines, the omentum, and the anterior abdominal walls; next, between the intestinal coils, here perhaps shut off by adhesions. But before all, the fluids will settle from simple gravity in the most depending cavities and pockets on the posterior abdominal and pelvic wall, especially in the usual recumbent position of the patient. Erroneously the Douglas pouch is considered to be the common reservoir for all of the routes the fluids have to take, and, erroneously therefore, emptying it is all that many deem necessary.

On the first glance at the often reproduced diagram devised by Delépine, one finds that the insertion of the mesentery and the mesocolon, in combination with other peritoneal folds, partitions the abdominal cavity (considered from the diaphragm down to the true pelvis) into five well-defined and separate pockets or drainage districts, and if the lesser cavity of the peritonæum is added, there are, in fact, six pouches which communicate with each other either not at all or only indirectly or partially. After examining these conditions with the friendly assistance of our distinguished anatomist in a number of bodies, I may describe these pockets in the following way:



After Delépine (slightly modified), to show the lines along which the peritonæum leaves the wall of the abdomen, and the pouches resulting from such an arrangement.

Pocket 1.—This may be called the *right perihepatic*, as it is filled mostly by a part of the liver. It lies on the right side of the vertebral column, suspensory ligament of the liver, and the free margin of the gastro-hepatic omentum. It is bounded above by the diaphragm; below, by the right half of the transverse colon and great omentum, the hepatic flexure of the colon, and by a double transverse fold of peritonæum which runs from the upper part of the ascending colon outward to the right abdominal wall, a little below the top of the eleventh rib and as far forward. This fold is of varying breadth. There may be only a trace, or it may be one to two inches broad, so as to stand four to five inches above the deepest part of the pocket when the body is recumbent. The perihepatic pocket is, measured from the anterior surface of the bowels to its deepest point, at least a foot deep, and, of course, more when the bowels are distended. It is open above between the liver and transverse colon where fluids can escape by overflow. They could do so also sideways along the right lumbar wall, were it not for the fold described above, which will, when the bowels are distended, be lifted and pulled up sufficiently to partially close this route and shut off the pocket from the underlying pocket to be described directly.

Pocket 2.—The second pocket, which we may call the *supracæcal*, is bounded above by the transverse colon and mesocolon, the mesentery and the small intestine below and toward the left, and to the right by the cæcum and ascending colon and its mesentery if it be distended and swung by a mesentery; but if it be empty and flattened against the abdominal wall, the right boundary will be the parietal wall between the above-mentioned lateral fold and a similar fold which frequently extends outward from just above the cæcum to the lateral wall near the iliac crest. This cavity is considerably flatter than the first pocket, owing to the forward curve of the lumbar spine, but is sufficiently walled up all around to prevent escape of fluids in the recumbent position except by overflow.

Pocket 3.—The third pocket, the *paracæcal*, comprises the right iliac fossa, and, running upward, drains into Douglas's pouch along the right side of the sigmoid mesocolon and mesorectum.

Pocket 4.—The fourth pocket comprises the area below the left half of the transverse colon and its mesentery and to the left of the small intestine and mesentery. Its deepest recess in recumbency is just under the splenic flexure of the colon. It drains also into Douglas's pouch.

Pocket 5.—The fifth pocket may be called the left *subdiaphragmatic*. It is bounded above by the diaphragm, to the right by the suspensory ligament of the liver and greater curvature of the stomach, below by the transverse colon and great omentum, by the splenic flexure, and by a double fold of peritonæum—the costo-colic ligament.

Pocket 6.—The sixth pocket is the lesser cavity of the peritonæum, entirely closed as known, excepting Winslow's foramen, which will admit very limited communication of fluids.

In a cadaver whose abdomen is filled with fluid, we will find it accumulated in the first four-mentioned cavities, while the left subdiaphragmatic space and the lesser cavity of the peritonæum will not be entered by it, being too well partitioned off from the balance. As the third and fourth cavities, though, represent one system of drainage, with Douglas's pouch as a common reservoir, in which capacity it also serves for the free fluids in front of the bowels, it is mostly this pouch and pockets 1 and 2 which will contain the purulent masses. Thus it is seen that there are several entirely separate drainage districts, and that the idea of emptying all of them by one common channel or opening is utterly incompatible with anatomical facts.* The real anatomical conditions are, on the other hand, an excellent arrangement for penning up the purulent material in the different pockets, and preventing an easy communication between them.

Now, at the beginning, the suppurative peritonitis will be limited to the immediate vicinity of the place of infection, say to the pouch it belongs to. As mentioned, the inflammation may remain local, the involved parts or the pouch becoming closed up by peritoneal, and especially omental, adhesions. But when the infection spreads it can do so by different routes or by a combination of some of them. First, the poison may pervade the softened bowel wall on points outside of the primarily infected pocket, because the same coil of bowel may be contiguous with different pouches. The second route of progress is by continuity in the peritoneal sheet itself. The third way is by infection through the purulent fluids which form on the anterior surface of the intestine or are lifted up there, whence they will get between the uninfected coils of bowels and finally settle in the most depending parts, the pouches infecting also their serosa. Under all circumstances, though, the originally infected pouch will be the most important object of surgical interference. It may be utterly impossible to make out which others have secondarily become invaded, and no doubt the term "general peritonitis" must not always be taken *verbatim.* It will practically suffice to know that one of the anatomical receptacles, and, before all, the anterior surface of the bowels, are suppurating. Still it will be of great consequence to have a general idea about which pockets are most likely infected before the operation; because, I state it again, it must be the rule to do the work with as little loss of time and as little cutting and breaking up as possible. In the great majority of cases we may pay little attention to pouch 5 and pouch 6 for reasons given, while, of course, they, under certain circumstances, will be the original seats of suppuration themselves. From such considerations we will do well to map out a certain scheme for surgical procedure according to the greatest probability with which we will encounter the original seat of the suppurative process by a direct route. I think that the following summary will be of some service:

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* What we read in the *Reference Handbook of the Medical Sciences*, in an article by Frank Baker, that "the abdomen is divided into a right and left space, and an effusion upon the right will pass to the right iliac fossa only, while one on the left will descend into the pelvis," is incorrect.

Pouch 1 will surely be the primary seat of infection when this starts from the liver to the right of the suspensory ligament and gastro-hepatic omentum; from gall bladder, gall ducts, and the right superior wall of the transverse colon and of the hepatic flexure; possibly, in adhesive perforation of the duodenum, pylorus, and some parts of the stomach.

Pouch 2 will be primarily affected possibly in typhoid and other ulcers, and in traumatic injuries of the small intestine; also in such of the ascending colon, the superior wall of the cæcum, and perhaps also in duodenal suppurations.

Pouch 3 has to be entered in appendicial diseases and disorders of the genital organs and bladder; also, in suppurations starting from the rectum, sigmoid flexure, and the small intestine.

Pouch 4, in suppurative processes originating in the small intestine, sigmoid flexure, descending colon, and rectum.

Pouch 5, in suppurations starting from the left lobe of the liver, spleen, anterior surface and left side of the stomach with certainty.

Pouch 6, from such originating in the posterior wall of the stomach, a part of the transverse colon, and by adhesive perforation from the pancreas, pylorus, and duodenum.

The first two pockets can be entered from the same incision along the anterior border of the right quadratus lumborum in a line from the brim of the ribs to the anterior superior spine of the ilium. If repair or removal of diseased tissue is intended in pouch 1, the incision will be better made transversely along the lower anterior border of the liver, which is the landmark of this pouch. Pouches 3 and 4 can be opened together by a median incision below the umbilicus, or by one more to the right—the usual incision for appendicitis, for instance.

Pouch 5 will be best found by an incision along the thoracic outline from the termination of the eighth or ninth rib to that of the eleventh or twelfth. The left lobe of the liver is the guide here for the examining finger.

Pouch 6 can be entered by a transverse incision through the omentum between the stomach and the transverse colon, or by way of the fifth pouch, sideways or from behind.

In order now to do thorough work, we shall not feel satisfied with flushing one pouch alone, if clearly more than one is the seat or receptacle of purulent material. Before all, it seems to me absolutely irrational to make a median incision below the umbilicus the general rule. Where, for instance, the left subdiaphragmatic pocket or the lesser cavity of the peritonæum, or even the perihepatic pouch, is involved alone, it is almost criminal to open the natural protecting walls toward all other cavities. The median incision can only be the right thing when we seek access to the pockets numbered 3 and 4 and perhaps for No. 2. We must conform the mode of entrance to the seat of the main trouble, and must make as many openings as necessary to get to every infected pocket. Common sense will further dictate that the flushing should be extended into a continuous drainage until the danger is overcome. Evidently such can not be done by a short tube. I think the most reasonable method is to carry syphon tubes into as many pouches as contain pus, so that the fluid could be raised from the deepest points without much manipulation. I would therefore advise the plan which is already used for pleural drainage known as the Buenau method.

Now, to illustrate my propositions, I will describe the proposed treatment for peritonitis due to appendicial perforation, which will be materially the same as for all generalized suppurations originating somewhere outside the fifth and sixth pouches. This plan may appear very complicated and meddlesome, but it will do so, I trust, only at first sight.

Be careful not to make much display and unnecessary ado around the patient. Do not scare him and all the relatives to death before you begin. There is full sepsis already present and the patient need not be sent through all the aseptic cleaning ordeals. In some cases you may operate on the bed with no more preparation than a waterproof sheet which you will push under the patient. Use nothing but sterilized water, perhaps the mentioned salt solution. Now, attend to the removal of the appendix, making the incision at the well-known place of selection; but be careful not to get into pouch 2, keeping always to the inferior wall of the cæcum. The appendix always belongs to pouch 3, where it will mostly have a little side pocket of its own. It will be always found in the same relation to the cæcum, and consequently to the second pouch, even if it should have been dragged far away by adhesions. It may be that the suppuration is entirely confined to the third pouch. If there be free purulent fluid on the surface of the bowels it will burst forward unless omental adhesions prevent it. In this latter case do not use any force in breaking them up. Seize the next knuckle of small intestine, make an incision one inch long into it, and wash out the gut in both directions with sterilized water, to which tannic acid as the most effective and least dangerous germicide may be added. Then stitch the intestinal incision into the upper angle of the abdominal incision by a few silk stitches, so as to establish an intestino-abdominal fistula. The tympanites will have greatly subsided, and you can now easily flush the abdominal cavity in front, if you want to, but be tender and do not break adhesions. But perhaps it will be best not to do any flushing at all. Next, insert the one end of the siphon tube (as it is used for washing the stomach) deep down into Douglas's pouch, and close the abdominal incision tightly around it at the lower angle and between it and the opening of the fistula. Secure the tube by a stitch to the skin. Now make an incision about two inches long on the anterior border of the right quadratus lumborum muscle only down to the internal fascia, beginning at the tip of the eleventh rib and carrying it down toward the outer superior iliac spine; perforate by knife or a dull instrument the upper end of the incision so as to get to the liver. You are then in pouch 1. Wash it out and insert a siphon tube, securing it again by a stitch to the skin. Make another perforation in the same incision through a point at the level of the umbilicus, and you are in pouch 2. Treat this the same way as No. 1, inserting a third siphon tube; close the incision around the second tube. Now have the free ends of the three siphon tubes submersed in some kind of an aseptic fluid in vessels put on the floor near the bed. Satisfy yourself of their working, and, if necessary, wash the cavities out through them by raising them and pouring sterilized water in through a funnel. It may be advisable to flush the intestines through the fistula at least once a day with a tannic-acid solution, otherwise keep the fistula protected by a cotton pad smeared with borated vaseline. Let the patient keep, if possible, a semi-recumbent posture. In this way all the main pockets can be drained and flushed, the bowels washed out, while no opened wound has to be attended to except the fistula, which, of course, will have to be closed afterward.

It is true that this plan will not suit every case of purulent peritonitis, but there is no reason why it should not be adapted to the circumstances. For instance, when pouch 1 is the seat of the original trouble, a transverse incision may be made over it, and then a small incision for the drainage of Douglas's pouch and for the intestinal fistula added. When for intestinal perforation a large median incision has become necessary, the three holes for the siphons may be made from the inside and the tubes pulled through, and the median incision closed, except, again, for the fistula. For suppurations in pouches 5 and 6 most probably no other but the originally infected one will have to be entered and kept drained. In cases, finally, in which the operator may feel satisfied with ridding the whole abdominal cavity of its purulent contents by only one thorough flushing, it has to be kept in mind that all the four pockets have to be attended to. The nozzle of the syringe may then follow the carefully and gently progressing fingers under the right lobe of the liver, then to the right of the umbilical transverse line, and finally down into Douglas's pouch, whence the current should be directed upward to the right and left of the sigmoid mesocolon into pockets 3 and 4. In case the siphon tubes should not be on hand, common rubber tubing of about half an inch in diameter and four to five inches in length may be employed. If the free end is submerged in a fluid and the air squeezed out of the lowest part of the tubes, they will become siphons.

Now, I am aware that my plan will, at best, be but one step forward, one of the many that have to be made before we will be able to cope successfully with so formidable a foe. There are many more factors to be considered than those named. The deleterious effects of the poisons upon brain, heart, kidney—in fact, upon the whole system—thrombosis, embolism, softening, and so on, may frustrate even the most perfect surgical method. Still, we should not let our hands sink in despair. If we learn to save one more out of a hundred, even that little is worth battling for.

APPENDIX.

Shortly after this paper was read I had a chance to test that part of it which pertains to the establishment of the temporary intestino-abdominal fistula.

Six weeks previously I had removed the uterine appendages of a virgin twenty-two years old. From inexplicable causes infection, especially of the abdominal parietes, followed. The walls of the incision sloughed and the patient lingered along with a slow elevation of the bodily temperature in the evenings. A vaginal examination revealed a mass in the right parametrium, which was thought to be an accumulation of pus. It was decided on to reopen the abdominal wound, which anyhow held together seemingly by granulations only, and to wash out the pus. But the mass turned out to be a suppurating lump of omentum firmly glued to the pelvis and to the right appendicial stump and the surrounding surface of the womb. It was not possible to detach it from the latter without causing an extensive removal of the serosa, and, as the womb was flaccid and looked injected and angry, it was deemed best to remove it at once, to get rid of this source of danger, as well as to get better drainage. This was done without much difficulty. On the second day evident signs of peritonitis set in, the temperature rose to 102° F., the bowels became distended, the pulse quick and small. There was constant retching. All attempts to move the bowels failed. Next day the case looked hopeless. The tympanites was excessive, the temperature reaching 103° F., and the general condition extremely threatening. I then reopened the abdominal incision once more. A large amount of discolored bloody serum with some pus flakes welled up. The walls of the intestines presented a bluish-red coloration, and occasional fibrin flakes were noticed on them. The next knuckle of small intestine was incised and, after a quantity of gas and very little fluid had escaped, the gut was stitched to the abdominal wall. Then the abdominal incision was closed, this being done about nine o'clock in the evening, after which I had to leave town and did not return until ten o'clock the following morning. I was not a little surprised to find my patient in a most satisfactory condition. The temperature was subnormal, the pulse steady though over 90, abdomen flat, no nausea. A few hours after I had left a copious discharge from the fistula had set in; in fact, it was so free that when I made my next visit I found the patient lying in a pool of that discharge. It was a dark, grumous fluid mixed with threads, in short, of the same nature as we are used to see it in peritonitic vomit after the purely bilious secretions have stopped. There was a continuous welling up. The next day the discharges became more fæcal and solid. They soon after stopped flowing, and at once the patient began to complain of pain and grew uneasy. All this was easily remedied by an injection of warm water through the fistula, which revived the flow. The patient improved so quickly and was in so satisfactory a condition that five days after the establishment of the direct intestinal drainage the fistula could be closed. The brittle condition of the bowel wall, though, prevented a perfect primary healing; there remained a small opening, permitting the escape of fluids, but it is to be hoped that this also will soon close. Otherwise the patient is in good condition.

This case is very similar to the two cases reported by F. Henrotin,* of Chicago, and I think they are as good proofs of the correctness of the view expressed as could be wished.

I may be permitted to add a few words in regard to minor technical points. The incision in the gut, I think, is best done before stitching it to the abdominal wall, because the circumference becomes so much smaller that the previous stitching will make the lips pucker a great deal. As it must be advisable to close the fistula with as little difficulty as possible, it seems to be best to leave at least three fourths of an inch between the lips of the fistula and the line of the abdominal suture; or, in other words, to pull the intestinal knuckle high up into the incision before securing it. When it has then to be closed there will be sufficient room on both sides for a double row of Lembert stitches. In regard to the detachment of the gut from the parietal peritonæum, it may be that it is not necessary at all and that such adhesions may be entirely innocuous. Still, I think the surgeon will feel better satisfied if he knows that everything has been returned to natural conditions. Perhaps, then, it will be a good plan to surround the fistula with a ring of gutta-percha tissue or some similar unirritative material before stitching, so as to have the foreign body interposed between the two peritoneal surfaces. When the surgeon then has closed the fistula, he would, after a few days of satisfactory watching, have nothing else to do but to clip the sutures, remove the tissue, drop the gut, and close the abdominal incision.

The Obstetrical and Gynæcological Society of Berlin.—The *Centralblatt für Gynäkologie* for May 12th announces the completion of fifty years of activity by this society, which, it says, is the oldest of its kind in Germany.

The late M. Diday.—The *Lyon médical* announces that Dr. Diday left three thousand francs to the Association of Physicians of the Rhone and a thousand francs to the General Dispensary.

ON THE ALLEGED SPECIAL LIABILITY OF BENIGN LARYNGEAL GROWTHS TO UNDERGO MALIGNANT DEGENERATION AFTER INTRALARYNGEAL OPERATIONS.

By FELIX SEMON, M. D., F. R. C. P.,
PRESIDENT OF THE LARYNGOLOGICAL SOCIETY OF LONDON.

WITH AN APPENDIX

By DAVID NEWMAN, M. D.,
PRESIDENT OF THE PATHOLOGICAL AND CLINICAL SOCIETY OF GLASGOW.

THE purpose of the following communication is to correct before the American medical profession a series of very grave misstatements made by Mr. Lennox Browne, of London, in a recent American work—viz., Burnett's *System of Diseases of the Ear, Nose, and Throat.* These statements are intended to support his views on the special liability alleged by him of benign laryngeal growths to undergo malignant transformation after intralaryngeal instrumentation.

I had hoped that the indignant protest against Mr. Browne's methods of argumentation raised by Mr. Shattock and myself in our *Sequel of a Case of Anomalous Tumor of the Larynx*, read before the Pathological Society of London, on December 19th of last year, and published in abstract in both the *British Medical Journal* and the *Lancet* of December 23d of that year, would have become sufficiently known in America to enable me to dispense with the very unpleasant task of exposing in America itself the fallacies and misrepresentations to which Mr. Browne has resorted. This hope, however, has unfortunately not been realized. On my return from the International Medical Congress at Rome I found a letter from an American laryngologist, Dr. Pearce, of Chicago, stating that the writer was surprised to find in Mr. Browne's article the assertion that I had changed my views, or rather that I was now included among the supporters of Mr. Browne's theories. Dr. Pearce then asked me whether this assertion was really true.

In view of this question it becomes unavoidable, I feel, in the interest of the important scientific point at issue, to ask for the hospitality of a leading American medical journal in order to expose the methods by which Mr. Browne attempts to support his ideas.

No effort will be made in the following lines to enter upon the numerous merely controversial statements contained in Mr. Browne's article.

A few stern facts will be submitted to the judgment of American readers, which can be easily verified by any one interested in this question. Not much comment will be needed, because these facts speak eloquently enough for themselves, and I shall leave the judgment as to Mr. Browne's ethics to the reader.

The charges which I bring against Mr. Browne are as follows:

1. That he has in his chapter on Deformities and Morbid Growths of the Pharynx and Larynx, in Burnett's work, when discussing the question of transformation of benign laryngeal growths into malignant ones, grossly misrepresented the views and statements of the late Sir

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* Enterostomy and Drainage in the Treatment of Diffuse Septic Peritonitis. *American Journal of Obstetrics*, August, 1893.

Morell Mackenzie, and distorted several of that author's cases.

2. That he has on the same occasion, in what he states to be an exact quotation from the report in the *British Medical Journal* of a paper of Dr. David Newman's, substituted at the crucial point an expression of his own for that used by the author, and has thereby entirely perverted the latter's statement and meaning.

3. That he has again on the same occasion not only suppressed material facts in connection with Mr. Shattock's and my own case mentioned in the beginning of this communication, but has on the strength of his suppressions grossly misrepresented my views on the question under discussion.

I.

After attempting to discredit the results of my collective investigation concerning the question of the transformation of benign laryngeal growths into malignant ones,[*] Mr. Browne asserts [†] that the late Sir Morell Mackenzie, in his essay on *Growths in the Larynx*,[‡] had arrived at very different results, and had "candidly accepted" in his one hundred cases three as "having assumed malignancy after having been treated as benign, because repeated microscopic examination by several eminent pathologists had justified their inclusion in that category."

This assertion is *absolutely untrue.* Not one word will be found on the page (page 97) of that work quoted by Mr. Browne, nor indeed in the whole work, making any such admission with regard to three of the one hundred cases. On the contrary, *nine years later* Sir Morell Mackenzie, in his chief work, *Diseases of the Throat and Nose*, vol. i, 1888, has stated in the most unequivocal terms (page 317) that in his own practice he has seen one case only in which a growth originally benign afterward assumed a malignant character, and that he was not aware that there was the slightest evidence that in any one case treatment had exercised an unfavorable influence.

To enable the reader to compare Mr. Browne's and Sir Morell Mackenzie's statements, I append them here *verbatim* in parallel columns.

MR. LENNOX BROWNE.	SIR MORELL MACKENZIE.
(Burnett's *System of Diseases of the Ear, Nose, and Throat*, vol. ii, 1893, p. 768.)	(*Diseases of the Throat and Nose,* vol. i, 1890, p. 317.)
"A very different experience from that of Semon may be deduced from the very frank statistics of Morell Mackenzie, for, with regard to recurrence, he relates that out of ninety-three cases treated through the fauces, six recurred which had been entirely extirpated; in three cases in which evulsion was effected the growth after a time underwent further development, and in one case the growth persisted. But this is not all. Three out of Mackenzie's one hundred cases are candidly accepted to have assumed malignancy after having been treated as benign, because repeated microscopic examinations by several eminent pathologists had justified their inclusion in that category."	"As regards the question of the conversion of benign into malignant growths, I may mention that in my first series of growths there was one case which at first was believed to be papillomatous, but subsequently proved to be an epithelioma. In this case, the full details of which will be found in my work, the patient's throat was so irritable that only three séances were attempted, and I only once succeeded in passing forceps into the larynx. As the whole growth was subsequently removed by thyreotomy, I can not imagine that a single endolaryngeal operation should have converted a benign into a malignant growth. The whole subject has recently been so ably discussed by another physician[*] that I can not do better than make use of his observations. While allowing that benign growths sometimes assume a malignant character in the entire absence of surgical interference, the writer calls attention in this respect to Virchow's[†] opinion, who admits that persistent irritation of *healthy* tissues may lead to the formation of heteroplastic growths. The author justly maintains, moreover, that the degeneration of benign into malignant neoplasms never takes place except when there is the inclination to constitutional vice, and he points out that under these circumstances the change may take place with or without surgical interference. "He further remarks that even frequently repeated local irritation does not produce degeneration. This has been most noticeable in those cases in which, in consequence of repeated recurrence, laryngoscopic treatment has had to be recommenced *de novo* many times, sometimes even on four, five, or six occasions, until finally complete cure was obtained. "In some cases of growths, especially in recurrent papillomata, I have operated from time to time for many years without ever observing any malignant degeneration. Indeed, in the many hundred cases of papillomata that have been operated on, I only know of three instances (Gibb, Mackenzie, and Rumbold) in which growths originally benign afterward assumed a malignant

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[*] *Internationales Centralblatt für Laryngologie*, etc., 1888–'89.

[†] Burnett's *System of Diseases of the Ear, Throat, and Nose*, vol. ii, p. 768.

[‡] London, 1871. J. and A. Churchill.

[*] London *Medical Record*, Nov. 15, 1878, p. 495. The article in question is anonymous, but I believe that the author is Dr. Felix Semon.

[†] *Die krankhaften Geschwülste*, Bd. i, p. 349.

> character. I am not aware that there is the slightest evidence that in any one case treatment exercised an unfavorable influence."

No comment is needed!

I now have to analyze the alleged three cases of conversion that have occurred, according to Mr. Browne's assertion, in Sir Morell Mackenzie's practice.

Mr. Browne says (*loc. cit.*, p. 768):

> "One case which was diagnosticated as a papilloma was that of a gentleman, aged forty-seven years, from whom Mackenzie removed several portions by the mouth, but severe stenosis following, thyreotomy was performed and the growth was radically extirpated. Six months later the patient died from malignant recurrence."

On referring to Sir Morell Mackenzie's work (*Growths in the Larynx*, p. 183) the reader will find that this case was described, not as a papilloma, but as an epithelioma by the author himself, who concludes his description *verbatim* as follows (*loc. cit.*):

> "The fact that during life it was believed to be and was treated as benign had led me to include it among these cases, and having done so before repeated microscopic examinations had succeeded in discovering any cancer elements, I did not think it fair to exclude it afterward."

The reader will judge from this how far Mr. Browne's statements as to this case are justified.

Concerning the second case, Mr. Browne says:

> "Another* was considered by Mackenzie to be a simple adenoma of specific origin and benign nature, notwithstanding that a sub-committee of the Pathological Society appointed to examine the specimen considered it a case of 'adenoid carcinoma.' Nevertheless the after history of the case was such that nine years later Mackenzie described and figured it as a malignant growth."†

I need not point out that, according to Mr. Browne's own description from this case, only one conclusion can be drawn—viz., that the sub-committee of the Pathological Society appointed to examine the growth was right and the observer mistaken in their differing opinions concerning the growth. Under no circumstances had Mr. Browne the right to quote this case as one of conversion from a benign into a malignant growth.

Concerning the third case, Mr. Browne says *verbatim* as follows:

> "A third very striking example is one also exhibited at the Pathological Society of London (*Pathological Society's Transactions*, vol. xxi, 1870, p. 51) as a papilloma of the larynx, but being attached to the pharyngeal aspect of the cricoid cartilage, it has already been considered by the present writer under the more appropriate heading of pharyngeal neoplasms. This growth was believed by Mackenzie to be benign, an opinion which was confirmed by the Morbid Growths Committee; but this also was described and again figured by him ten years later as a malignant sarcoma."‡

With regard to this case I beg to observe:

1. That the growth was admitted by Mr. Browne himself not to be an intralaryngeal one at all, and that any reference to it in the present connection therefore is absolutely misleading.

2. That the case was *not* exhibited, as Mr. Browne tells his readers, as a "papilloma of the larynx," but that its title, as given by Sir Morell Mackenzie himself (*Trans. of the Pathological Society*, vol. xxi, p. 53), is Large Tumor removed from the Posterior Surface of the Cricoid Cartilage.

3. That in Mackenzie's description of the case there is no word to be found as to his "belief that it was benign," as asserted by Mr. Lennox Browne.

4. That the report of the committee appointed, signed by Mr. Howard Marsh and Dr. Moxon, with regard to the histological structure of the growth, refers to the fact that the "central part of the papillæ is made up of a richly nucleated tissue, the nuclei being not more than a quarter of the size of those of the epithelial elements; fibrils connect these and blend to form a sarcous tissue (?) in which large blood-vessels are imbedded," and then goes on to say: "From a structural point of view we should call the growth a papilloma; the transitional forms between epithelium and sarcous tissue (growing alveolar in the subepithelial portion of the growth) throw doubt on the simplicity of the plan and raise proportional probabilities of its recurrence."

(The sarcous tissue in the center of the papillæ is also figured in Plate I, Fig. 1, of the volume just quoted.)

The reader, therefore, will be able to judge for himself how far Mr. Browne's description of this case as a very striking example of the conversion of a papilloma into a sarcoma is justified.

Mr. Browne continues (*loc. cit.*, p. 769):

> "It was the knowledge of the after history of these cases as well as one or two others of the same series (the details of which have not been published) that at first awoke my mind to the possibility of the conversion of benign into malignant growths." . . .

I have, I think, shown that these statements are absolutely incompatible with those of Sir Morell Mackenzie himself and with the facts of the cases reported; and I think it simply right in conclusion of this part of my paper to emphasize the fact that Mr. Browne, who has more than once been challenged to substantiate his assertions, and who at last, in 1887 (*British Medical Journal*, 1887, vol. i, p. 1316), gave his own list of the instances in question, has neither in that list nor on any other occasion in the *twenty-three* years which have elapsed since the publication of Sir Morell Mackenzie's first work, *once* claimed the cases to which he now attaches so much importance.

Now, however, that Sir Morell Mackenzie is gone and can no longer protest against the unwarrantable use made of his cases in clear contradiction to his own plain statements, Mr. Browne attempts to play him out, not merely against myself, whose views on this whole question Sir Morell had so unreservedly accepted (see above), but also against the accumulated experience of the great majority of the leading laryngologists of the world, collected nearly twenty years after the publication of Mackenzie's essay.

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* *Op. cit.* Case 88, p. 186.

† *Manual of Diseases of the Throat and Nose*, vol. i, 1880, p. 330. [The number of the page is wrong; it ought to be 339.—F. S.]

‡ *Op. cit.*, p. 350.

II.

After having utilized Sir Morell Mackenzie's cases in the manner described, Mr. Browne goes on to claim a case reported by Dr. David Newman (*British Medical Journal*, vol. i, 1889, p. 133) as "very striking in the direct relationship between the operation and the malignant transformation." Dr. Newman himself, as will be seen from his description in the *British Medical Journal*, brought forward this case, *not* as an example of the conversion alleged by Mr. Browne, but with the view of showing that "while conscious of the value of removing portions of a laryngeal neoplasm for diagnostic purposes, the proceeding should not be resorted to in cases suspected to be cancer [! F. S.], unless the patient is willing to have a radical operation performed immediately that the diagnosis has thus been completed." Inasmuch, however, as Mr. Browne would certainly have been entitled to draw a conclusion from a case different from that of the observer himself, no objection could be raised against his interpretation, if he had not unfortunately had recourse to a proceeding which can not be otherwise characterized than as a *direct perversion* of Dr. Newman's statements.

Mr. Browne (*loc. cit.*, p. 769) quote's Newman's description as given in the *British Medical Journal*, and concludes this by saying *verbatim* (*ibid.*):

"The reporter, *whose exact words have been quoted* [the Italics are my own—F. S.], deduces from this case the conclusion," etc.

The crucial sentence in the quotation is in Newman's words the following:

"The subsequent course of the case proved them [viz., some enlarged lymphatic glands—F. S.] to be carcinomatous in their nature, and the growth within the larynx, which on examination of the first specimen was believed to be a papilloma, ultimately on examination of subsequent specimens proved to be an epithelioma, and the patient died from the disease."

On comparing, however, the original sentence in the *British Medical Journal* with that given in Mr. Browne's description, the reader will find that for the word "believed" Mr. Browne has *simply substituted* the word "demonstrated," and thereby entirely altered the sense intended by the author! The substitution is maintained in the concluding sentence of the paragraph referring to Dr. Newman's paper, in which Mr. Browne again asserts that the conclusion of the diagnosis was supposed to have "demonstrated" in this case the innocent nature of the growth. On the strength of this manipulation Mr. Browne dares to claim in his concluding paragraph on the next page that to his list of more or less willing adherents to his conclusions must now be added Dr. David Newman's name, together with my own.

III.

"But the strongest case of all," Mr. Browne continues (*loc. cit.*, p. 770), "is one related by Semon himself, and already referred to under the head of benign angeiomata. In this case the transformation is so vividly illustrated that details of the subsequent history are most instructive, and the more so since they have not appeared in the journal in which the case was first reported. In the opinion of Massei and Malebranc, the growth was 'an angeioma, possibly of ancient date but of recent development.' Semon, in his clinical account of the tumor, remarks: 'There was no enlargement of the glands in the neck and no evidence of malignancy; in short, I entirely agreed, from what I had read in laryngeal text-books of that extremely rare form of laryngeal tumor—angeioma—but of which I had never seen an instance, that the growth was in all probability of this character.' A supplemental report in another journal states that the tumor, which on removal by the galvano-cautery snare was found to be an innocent papilloma surrounded by blood-clot, recurred four months and a half afterward, with the same external appearances. The new tumor was removed in its greatest part *per vias naturales*, and microscopic examination revealed that it was of the same nature as the original, but near the base existed epithelial cones projecting into the tumor.

"After Mr. Shattock and Mr. Butlin had pronounced the diagnosis of malignancy, the rest of the neoplasm was removed by subhyoidean pharyngotomy. On the evening of the fourth day after operation, the patient died comatose. Further examination of the tissue removed by the external operation left no doubt as to its malignant nature.

"Whether, in this or any other cases, the malignant transformation be the result of irritation caused by more or less partial evulsion, or whether it be that some of the papillomata, adenomata, or angeio-myxomata of the larynx are to be classified under the head of 'quiet cancers,' the fact remains that instances of the malignant conversion of each of these varieties of growths (within the larynx) have been admitted by Schnitzler, Seiler, Seifert, Solis-Cohen, Tauber, Wagner, Jarvis, Morelli, Blanc, and others, and to this list of more or less willing adherents to the author's conclusions must now be added the names of Felix Semon and David Newman."

It is not easy to correct in a few words the misrepresentations of which this whole description is made up. The facts are simply as follows: The patient in question was sent to me by Dr. Malbranc, of Naples, with a letter in which that gentleman stated that he and Professor Massei, of Naples, had arrived at the diagnosis of angeioma of the larynx. My own examination appeared to fully corroborate that result. Even after removal the growth looked entirely like an angeioma, and Mr. Shattock and myself were not a little surprised when microscopic examination revealed that it was an apparently typical papilloma incased within an extravasation of blood. The coagulum had entirely concealed the cauliflower-like proper tissue of the tumor, and had given it the appearance of a globular mamillated growth. The proper tissue of the tumor was remarkable for its delicacy, and in this resembled the papillomata of the bladder rather than those commonly met with in the upper air-passages. (This last sentence is quoted from our first description of the case in the *Transactions of the Pathological Society of London*, vol. xlii, 1891, p. 392.) Our final conclusions, when reporting this case to the Pathological Society of London, were *verbatim* (*loc. cit.*) as follows:

"1. It is extremely rare to find a papilloma springing from the arytæno-epiglottidean fold unless there be almost a univer sal papillomatous disease of the laryngeal mucous membrane. In the large number of papillomata which I [F. S.] have seen I have never come across a solitary papilloma in a similar situation.

"2. The occurrence of spontaneous hæmorrhage from a laryngeal papilloma is, so far as our experience and knowledge of laryngological literature go, unique. Although analogous growths in the bladder regularly give rise to spontaneous hæmorrhage, no single instance of a similar occurrence in the larynx has to our knowledge ever been described.

"3. The formation of a complete casing of blood-clot about a papilloma, so changing its clinical character and simulating the appearance of an angeioma, is equally unique, and will have to be kept in view by future observers."

At the time of our first description there was no evidence, either clinical or histological, of this growth being malignant, and we therefore did not refer to that contingency. Nevertheless, in view of the patient's age, the unusual situation of the growth, and the occurrence of the spontaneous hæmorrhages, we considered it more prudent not to commit ourselves to too definite an opinion as to the actual nature of the growth, and therefore, instead of describing it as an Unusual Case of Papilloma of the Larynx, or giving it a similar title which would have bound us to the opinion that the growth belonged to the category of benign laryngeal tumors, deliberately chose the uncompromising title, Anomalous Tumor of the Larynx, under which it is published in the Pathological Society's *Transactions.*

From the foregoing facts it is obvious that Mr. Browne had *no right whatever* to speak of this case as one of "benign angeioma." It has *never* been described under that title, and Mr. Browne has simply availed himself (*loc. cit.*, p. 760) of the fact honestly recorded in the clinical history—viz., that the growth had been originally mistaken for an angeioma—to inform his readers that the "microscopic investigation entirely upset the diagnosis formed after laryngoscopic observation." In both his descriptions, however, he has absolutely suppressed not only our final conclusions, but above all the significant fact that already in our very first description we had given our communication the title of Anomalous Tumor of the Larynx, a fact which would have shown every unbiased reader of Mr. Browne's descriptions that the authors did not wish to commit themselves to any definite opinion as to the histological character of the growth.

This suppression is bad enough, but what follows is much worse. Mr. Browne describes the further history of the case from a brief preliminary report given in the *Centralblatt für Laryngologie*, etc., seven months after our first description,* and winds up not merely with the assertion, taken by him as an indisputable *fact*, that in this case a transformation had occurred, but with the simply incredible declaration that I myself must now be added to his list of more or less willing adherents to his conclusions. Considering that I have devoted an enormous deal of labor, with the assistance of most of the leading laryngologists of the world, in proving to the satisfaction of probably every laryngologist in the world, except Mr. Lennox Browne, that his so-called conclusions are utterly untenable, this last declaration in itself surpasses in boldness of conception all his previous achievements in that direction; but what will the reader say when he learns that the annotation in the *Centralblatt* from which Mr. Browne has culled his description of the further history of the case ends *verbatim* with the following sentence (*Centralblatt*, vol. viii, p. 318):

> "That the new growth in this case was *primarily* [this word is printed in Italics also in the original] malignant, and can not in any way be looked upon as an example of transformation of a benign into a malignant tumor, appears to be unquestionable, and finds further corroboration by the various points enumerated above."
>
> ("*Dass die Neubildung in diesem Falle* primär *bösartig war, und nicht etwa als Beispiel des Uebergangs einer gutartigen in eine bösartige Geschwulst betrachtet werden kann, ist wohl unzweifelhaft und findet durch die genannten Momente weitere Stützen.*")

Mr. Browne *calmly suppresses this entire sentence*, and on the strength of his suppression dares to claim me as an adherent of his views!

When the sequel to the case was in December last brought before the Pathological Society of London, Mr. Browne in the discussion at first defended his views. But when all the speakers in the discussion—*i. e.*, Messrs. Butlin, Victor Horsley, and Bowlby—had expressed their agreement with Mr. Shattock's and my own views as to the primary malignancy of the growth, and after Mr. Shattock had once more from the histological point of view shown that it was simply impossible to come to a conclusive opinion as to the histological character of the growth from the microscopic examination of the projecting part first removed, Mr. Browne suddenly declared (*British Medical Journal*, December 23, 1893, p. 1337) that "after the record of the subsequent histological examination he withdrew his previous statements as to the present case being an instance of the transformation of a benign into a malignant formation."

Be it observed this was "the strongest case of all" (Lennox Browne, *loc. cit.*, p. 770), and the one on the strength of which Mr. Browne, in a manner fortunately almost unheard of in scientific controversies, dared to misrepresent the opinions which I have unwaveringly held since, in 1878, I first took part in the discussion.

How bad must a cause be when it requires to be defended by such means as those employed by Mr. Lennox Browne!

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Appendix.

Dr. Felix Semon has submitted to me the foregoing paper in manuscript, and I desire to say that my views regarding the possibility of malignant transformation of benign tumors of the larynx are the same as his own, and not, as Mr. Browne assumes, that I accept the conclusion he has come to. When Mr. Browne succeeds in proving by facts, not by misquotations, that benign growths are liable to undergo malignant transformation, then I may change from my present position, which is, first, that Mr. Browne has entirely failed to prove that a benign growth is likely to undergo malignant transformation as a consequence of intralaryngeal interference; second, that he has absolutely no right to claim me as an adherent to the opinions expressed by him; and third, that the facts published by authors are not consistent with the theory he tries to demonstrate.

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* A full description of the further history of the case and of the histological features of the growth will be published in the forthcoming volume of the *Transactions of the Pathological Society of London.*

DAVID NEWMAN.

PNEUMONIA OF THE AGED.*

By J. H. PRYOR, M. D.,
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THE title, Pneumonia of the Aged, is used in contradistinction to Pneumonia in the Aged. The essential differences between the two clinical types were recognized and carefully described by the older clinicians, notably Grisolle and Trousseau. The distinction established by the two terms has been preserved, as it promotes the object of this paper. Any argument in support of the use of the term "pneumonia of the aged" seems unnecessary at this time. It has been called asthenic, latent, and senile, with reference to its peculiar symptomatology. Latent pneumonia occurs as a complication of various conditions and diseases, and the term senile pneumonia is employed in a manner too broad to encourage proper discrimination. Pneumonia affecting the aged may be characterized by the usual clinical history of the disease as manifested in earlier years, and resembles the so called sthenic or frank type. It attacks the strong and well-preserved individual and is accompanied by reliable indications for diagnosis. The extreme type is not common, but corresponds with the affection in middle life. This form has been designated as pneumonia in the aged. Compared with pneumonia of the aged we notice varying degrees of dissimilarity, and the reason becomes apparent why the latter has been considered as belonging to a distinct clinical variety. To avoid the dangers of drawing fine distinctions and differentiating too arbitrarily, it may be well to state that conformity of type based upon clinical features is usually a matter of gradation, and that no attempt need be made to adhere to a rigid classification. Pneumonia of the aged differs from pneumonia in the aged in the following manner:

The disease is peculiar to the old and infirm, latent in its development, obscure in its manifestations, and erratic in its course. The familiar symptoms of pneumonia are absent or subdued, owing to mental and physical decline and debility and associated apathy of function and loss of sensibility and vigor. The constitutional symptoms are usually so slight as to cause no comment or complaint, and even when present early in the affection they are rarely sufficiently distinctive in character for one to decide whether they are due to grave disease or those ill-defined and transitory ailments of feeble old age. The attention is not attracted or the diagnosis most difficult, and consequently the disease is frequently unperceived and death assigned to other causes. Experience with the affection is mostly limited to institutions for the aged. The autopsy occasionally reveals evidence of advanced pneumonia, previously unsuspected. It is often the cause of mysterious sudden death in the aged, and might be found many times where such causes are assigned as senile debility and cardiac disease. The literature contains very little mention of this common and very fatal form of pneumonia. In the climate of the Northern States pneumonia appears to be the cause of more deaths among the aged than all other diseases combined. Statistical information seems to show that the mortality rate in those over sixty years of age is about eighty per cent. and steadily increases with advancing age. Some authorities state that after sixty-five years pneumonia is the cause of death in ninety per cent. These conclusions at least demonstrate the frequency of pneumonia in old people, and make the recognition of the most obscure and elusive cases important. In 1887 I published a rather complete clinical study of pneumonia of the aged, and endeavored to direct attention to the vague manifestations of this often perplexing affection. Since that time increasing experience has only strengthened the belief that it is frequently overlooked entirely, and that many who have not enjoyed special opportunities for investigation meet with unnecessary difficulty in determining its presence.

At this time the object will be to attract renewed attention to the subject, and to point out some of the chief clinical features to assist in diagnosis. It must be remarked that there is a vast difference between vigorous and feeble old age, and in the resistance which these conditions offer to disease. We are accustomed to classic descriptions of the indications of morbid conditions in the average human being of adult life, and perhaps too little stress is laid upon the influence of senility and its accompanying changes in structure and function. In debilitated old age the symptoms are less pronounced, and the value and character of physical signs often lose their significance. The inquiry must be directed, therefore, to the evidence of disease as modified by these changes, and their value estimated many times by another standard of health. We are chiefly concerned with the facts that pneumonia of the aged is atypical when compared with the description in the text books, that the difference in clinical manifestations is due to the causes already mentioned, and that a diagnosis depends upon an acquaintance with their relative value and meaning. The vast majority of all cases occur between November and May. In Buffalo the largest number develop in March, and seem to follow a cold northeast or east wind, whether the individual be confined to the house or not. The upper lobe is more often affected than in the middle-aged adult, and the disease more inclined to extend downward. In the stage of congestion the affected portion crepitates less, and the lung does not sink, as a rule, in water. The exudate is more fluid, and it is sometimes difficult to decide whether the lung is simply congested or beginning consolidation is present. Sometimes, owing to extreme rarefaction, the lung when hepatized does not sink to the bottom of the vessel. The left lung is involved nearly if not quite as often as the right.

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* Read before the Medical Society of the State of New York at its eighty-eighth annual meeting.

The pneumonia is more often double, and œdema is much more common. Tubercular pneumonia is more common than is generally believed, and there is a similarity in the clinical features. Lobar pneumonia, due to mixed infection, often follows tubercular infiltration in the aged. The clinical history is marked by the absence of the usual symptoms, or their obscurity. There are cases where the patient does not betray the slightest indication of his condition. He may walk about as usual, partake of his meals, and suddenly die without any complaint or reference to illness. As a rule the symptoms are indefinite, and much care is required for their detection. Any disturbance does not cause so much uneasiness as in the middle aged, and subjective symptoms are not mentioned. The premonitory symptoms rarely attract any attention, and the invasion of the disease is often unrecognized, because the symptoms are vague and not of a nature to direct attention to the chest. At times, however, the onset is pronounced, and may be accompanied by delirium and great prostration. The initial chill is rarely well marked and is sometimes absent. The most constant and reliable symptom at the outset is the elevation of temperature, usually ranging from 102° to 103°. The temperature should be taken in the rectum, as the axillary and buccal temperatures show inaccuracies and fluctuations in the aged. Later the temperature may reach 104° to 105°, or even higher. The pulse, owing to the frequency of arterial changes, is unreliable; acceleration is the cause of suspicion, but trustworthy information can best be obtained by cardiac auscultation. The respirations are not relatively increased, as in adults. Sometimes they are of a puffing or panting character. Dyspnœa and catching respiration is not particularly noticeable unless the apex is affected. The respirations rarely pass twenty-five or thirty per minute. Any effort in breathing, combined with raising of the shoulder, should lead to an examination. Cough may be slight or wanting. The cough and dyspnœa of chronic bronchitis or asthma sometimes subside during an attack of pneumonia. The characteristic sputum is rarely present. It is oftenest thin, lacking in cell elements, and, when due to coexisting œdema, watery. My experience is in accord with the authorities who state that the expectoration never becomes purulent in the stage of resolution. The absence of pleurisy as a complication is most notable, and in the large proportion of cases there is no complaint of pain. The countenance affords valuable information in the way of expression and change of color, and the mental faculties are almost always perturbed in febrile disturbances of old age. The course and duration of the disease differ from those of middle life in that the completion of the earlier stages is sooner accomplished and the stage of resolution more protracted. Recovery, when it occurs, is generally marked by a somewhat lengthened crisis; and the critical diarrhœa continuing through the lysis is more common than a critical sweat.

The inexperienced physician finds that physical examination of the chest of the aged is a new problem. Senile changes in the lungs and chest wall modify sounds, and practice alone can make one familiar with their altered character. At first there is a tendency to arrive at erroneous conclusions, aside from the suspicions aroused by the slightly altered breathing, and physical signs offer little information until the exudate has filled a portion of the lung to a considerable extent; dullness is often a sign of relative value only. The crepitant râle is seldom heard. It may be developed occasionally by obliging the patient to take a deep inspiration, but as a rule the disease is not detected until too late. If the breathing is tubular anywhere it is apt to be heard over the root of the lung. Dullness over the upper lobe is not as marked as at the base, owing to the rigidity of the sternum and chest wall and the retraction of the lung away from the ribs. Tubular or bronchial breathing, when found, is most distinctive and sufficient for a diagnosis. It is even more intense than that heard in the adult, and is often more metallic in quality. Bronchophony is changed somewhat by the weak, quavering voice, and resembles ægophony. Deep percussion is more apt to bring out the resonance of the whole chest, and should be employed carefully. Areas of dullness found in the chest of the aged may be due to senile changes, and are often confusing. Fluid in the pleural cavity is often overlooked, and much may accumulate with slight disturbance. The insertion of a needle is more often necessary to arrive at a diagnosis. Cases occur in which the exploration of the chest gives negative or confusing results, and it becomes necessary at times to depend somewhat upon the associated symptoms; especially is this true in the earlier stages.

These briefly constitute the more reliable signs and symptoms. The important point in diagnosis is to suspect and search for trustworthy evidences of the disease. It is necessary to appreciate the extreme frequency of pneumonia in old people; the fact that of all acute diseases of the aged, pneumonia is oftenest latent, and that it produces the highest range of temperature and greatest prostration. The symptoms to be observed with greatest caution are the chill, brown, red, or dry tongue, malaise, change in breathing, malar flush, cyanosis, delirium, cough, slightest pain, prostration, increase in pulse beat, and finally the rectal temperature. The symptoms are confusing at first, and often point to cardiac and cerebral disease. It is a wise rule to exclude pneumonia of the aged, and not disregard the slightest deviation from the usual standard. Of all the characteristic symptoms, elevation of the rectal temperature is the most constant and important. I have never noted its absence, even in walking cases or in the insane. At times it is the only indication of acute disease in the aged. Broncho-pneumonia may not be associated with pyrexia, but my experience would indicate at least that *lobar* pneumonia of the aged is seldom afebrile in character.

The diagnosis must rest largely upon the high temperature and the physical signs. The diseases which frequently simulate pneumonia of the aged are hypostatic congestion, simple congestion, œdema, capillary bronchitis, pleurisy with or without effusion, and tubercular infiltration. The differentiation can not always be made by consulting the physical signs, but generally it is not difficult if prominent features of the case are considered. The points of differential diagnosis are not so broadly defined in the aged, and analysis must be cautious and slow. Finally, pneumonia of the aged is often secondary or complicating, and many times hepatization is revealed at the autopsy as the direct cause of death. In these cases the disease is unsuspected because the attention is confined to another ailment.

TECHNIQUE OF KIDNEY OPERATIONS.

By FRANCIS L. HAYNES, M. D.,
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Three important points in the surgery of the kidneys and ureters have recently been developed.

1. The kidney and the upper end of the ureter may be withdrawn from the abdominal cavity, both thoroughly explored, and returned to their position, without producing any serious results. Probably the best way to explore the kidney is to split it along its back, insert a finger into its pelvis, and apply the fingers of the other hand to the entire periphery of the kidney, thus making a complete bimanual examination. Any suspicious points may be cut into and inspected, taking care to make the incisions in the direction of the urinary tubules. The ureter may then be explored by a bougie. Cabot has shown that a good portion of the ureter may be exposed outside the peritonæum by an appropriate incision and by displacing the peritonæum in somewhat the same manner as for ligation of the internal iliac.

2. All hæmorrhage may be checked by catgut sutures, passed with a round needle in such a manner that neither the pelvis of the kidney, the ureter, nor the renal artery or vein shall be completely obstructed. Large wounds of the kidney or its pelvis may be very rapidly and efficiently closed and all hæmorrhage at once checked by passing a long, slender, round needle, threaded with catgut (not chromicized), entirely through the kidney at the site of the lesion; then inserting the needle at a distance of from a quarter to two inches from the point from which it had just been withdrawn, passing it again entirely through the kidney; the thread is then to be tied with just sufficient firmness to bring the surfaces of the wound in apposition and check the hæmorrhage. Any number of these mattress sutures necessary to produce the desired effect may be used, and they may be supplemented by any other variety of suture, always using catgut.

3. Ureteral anastomosis, as devised by Weller van Hook, of Chicago, and practiced successfully by Howard Kelly, of Baltimore (in a woman whose ureter had just been divided during an operation for fibroma), is also destined to play an important part in surgery. My friend Dr. Penrose, of Philadelphia, has made a further advance. While doing an abdominal hysterectomy he deliberately excised the lower portion of a ureter involved in the malignant growth and, after ligating the bladder end of the ureter, transplanted the kidney end into the bladder and closed the abdominal wound without drainage; the patient made an uneventful recovery.

I say nothing of excision of portions of the kidney, as this procedure is still in its infancy. Doubtless it will soon become a well-established operation.

The first procedure described was conceived by three men independently. It was first published by myself, in the *Southern California Practitioner*, September, 1893. The first operation done by me was on Robert Relstab, December 10, 1892 (nephro-lithotomy). The procedure was next described by Noble (*N. Y. Med. Jour.*, March 3, 1894). His operation was done on December 12, 1893. Dr. Noble was evidently ignorant of my note; and when I did my operation I did not know that my friend Dr. Howard Kelly had anticipated me. I have recently received a letter from him in which he informs me that he had done the same operation in May, 1892 (several months before my operation).

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PNEUMONIA—GANGRENE.

By E. A. REILLY, M. D.,
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On the 20th of March, 1892, I was called to see Miss S., aged fifteen years. Upon arriving at her home her mother, whose face wore a troubled and anxious look, informed me that she feared her daughter, for the first time in her life, was a very sick girl; that two or three days previous to my visit Miss S. had attended a social gathering in their immediate neighborhood which resulted in her contracting a severe cold. All the known domestic remedies had been exhausted without success. The patient grew steadily worse until the morning of the 20th, when she suffered a severe chill, and complained of a pain in the right side. The patient had always been a strong and vigorous girl, yet when I saw her, six hours after her chill, she was greatly prostrated, with a dull, heavy expression. Her face was flushed, hot, and dry. Respiration was greatly accelerated, being shallow and irregular, which rendered her speech difficult and broken. She had a short, hacking cough, attended with a labored expectoration of tenacious and rusty sputa. Her pulse was small and reached 112 pulsations a minute. Her temperature was 104·3°. There was great thirst and the tongue was dry and furred. The pain in her side was very acute and constant; its presence caused the patient great anxiety and distress, it being aggravated every time she coughed or took a deep breath. After making an examination of the chest I found in the middle and lower lobes of the right lung slight dullness on percussion, and on putting the ear to the chest wall in this locality I found a succession of fine, dry, crackling sounds, disclosing the characteristic crepitant râles of pneumonia. It not being my intention in reporting this case to offer anything new in the care or treatment of pneumonia, but more particularly to call your attention to its very unique termination or complication, permit me to say that Miss S. endured a regular ten days' run of pneumonia, passing the crisis with no relapses or apparent complications, and terminating in complete resolution.

On March 31st the patient was able to sit erect in the bed, to eat and sleep well, seeming in spirit and feeling as well and happy as ever. My visits ceased two days after, and I heard no more of the patient until April 15th, when I was again called to see her. Her mother explained that two or three days after I left the patient seemed to fail. Her appetite left, her bowels were constipated, her usual cheerfulness had succumbed to a feeling of lassitude and indifference, until she had again taken to her bed, and had remained there for the previous two days. I made a very careful examination of her chest but found no symptoms of disease in the organs of respiration and circulation; her pulse was small and weak, about 82 a minute. Temperature normal. Her mother informed me that there had been no operation of the bowels in three days, and that the menstrual period was delayed six weeks. Upon asking the patient how she felt, she answered that she did not know, that her feelings were so strange and queer she could not explain them. To quote her own language, she said: "I have neither pains nor aches, neither courage nor fear. I do not want to get up, neither do I want to remain in bed. I can not sleep or eat, I can not think. Oh, dear! I do not know how I feel." I ordered a cathartic and left a sleeping potion, promising to return next day. On the next day, April 16th, I found that she had slept well during the night and in the early morning the bowels moved thoroughly. She seemed slightly improved, and I ordered a tonic of iron, strychnine, and quinine. After an interval of two days I visited her again. At this time her mother called my attention to a swelling and soreness of the outer margin of the right ear, extending down into the lobule. Believing that it was perhaps due to the fact that she rested mostly on that side, I dismissed it as trivial. She seemed no better; on the contrary, she seemed weaker and more restless. On the following morning I was hastily summoned, and found the patient suffering such violent pains in both legs and thighs that her cries alarmed the neighborhood. I gave a hypodermic of morphine, which was repeated again in the evening. The next morning complaint was made of pain in the toes, the margin of both ears, also in the shoulders and arms, extending to the finger tips. In the course of forty-eight hours the toes and fingers became much swollen, also the tip of the nose and superior margins of both ears. The hands and feet, also both cheeks to a less degree, were covered with spots of purpura, which rapidly became black, shriveled up, and fell off, indicating that the skin only had been attacked. This was also the result with the tip of the nose and the margins of the ears. The process was different with the toes and fingers. They were swollen and very painful, of a bluish-red color in some parts, of a dark livid in others, all being icy cold. Shortly after this, small seropurulent vesicles appeared, destroying the skin and laying the parts bare. It appeared now that the parts were to be restored, but after a time, when the diseased members were nearly healed, the attack again returned. This was repeated in a space of three weeks four or five consecutive times. All the fingers recovered; but in the case of the second and third toes of each foot it was of longer duration, and there followed from the consecutive hyperæmia a true mummification or dry gangrene, which terminated with a falling off of the last phalanx of the four toes The treatment all through the six weeks was of a quieting and supporting sort. There was no elevation of temperature and but slight increase in the pulse rate. At the time of the falling off of the toes the patient was gaining in strength and flesh rapidly. In two months she walked with no appreciable difficulty. She has not been ill since and is enjoying perfect health.

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* Read before the Elmira Academy of Medicine, February 7, 1894.

We are told that recovery from this form of gangrene is rare. I have never seen or heard of a case of this kind before. I can find no literature upon the subject. The books tell us that gangrene may occur in the course of certain severe diseases, such as diabetes, typhus, typhoid, measles, scarlet fever, and diphtheria, but no reference is made to this form ever following a typical case of acute pneumonia. There is a form of gangrene referred to by the older writers called "ergotism," which seems to have passed away from modern observation, and in view of the very free use of ergot at the present time without the results heretofore described, there may be a serious doubt as to whether the disease was not largely due to the straitened and impoverished condition of the patients who had taken or used the ergotized rye and wheat. It was looked upon in the middle ages as a miraculous punishment from the hand of the Deity. The first accurate account of this affection dates back to 1597. In 1747 a fatal epidemic of this kind raged in southern Europe, where rye bread was extensively used. Many who were too poor to buy the rye made their bread from the refuse after sifting. A French writer tells of a man and wife and two children who perished miserably after eating bread of this kind. The third, an infant at the breast, who had eaten panada made with this flour, escaped death, but was deprived of both feet by gangrene.

In searching the writings of the various authors I learned that the majority arranged the varieties as moist gangrene, dry gangrene, senile gangrene, white gangrene, symmetrical gangrene, diabetic gangrene, diphtheritic gangrene, noma, and hospital gangrene. Under none of these heads can I securely fit my case. The nearest approach to it is in a description by Raynaud, in 1862, of what he calls relapsing gangrene. His was the first accurate description. He describes it as attacking the fingers, toes, tip of the nose, and external ears. He says it is exceedingly rare, Billroth, up to 1872, having met with a single case, and other observers with extensive experience having seen no example.

According to Raynaud, the disease occurs chiefly in chlorotic and nervous individuals of early adult life, patients in convalescence from typhoid fever and similar exhausting diseases. You will observe that my patient, on the contrary, was not chlorotic or nervous. Raynaud further states in his description that four months beforehand the affected part suddenly becomes white, bloodless, without feeling—dead. The skin is strongly wrinkled and shrunken, the ends of the fingers appear thin and conical. You will observe in Miss S.'s case the onset was rapid and severe and the affected parts swollen and hyperæmic. In closing his remarks Raynaud states that the falling off of the last phalanx is the usual termination of these cases, which point of fact agrees with the fate of the four toes in Miss S.'s case.

This is all I have been able to find upon the subject. Dr. W. C. Wey, Dr. H. D. Wey, and Dr. T. A. Dundas saw the case before separation took place, and pronounced it very interesting and unique, all of which prompted me for further information to place it before the Academy of Medicine for discussion.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending May 26, 1894:*

WARD, B. R., Assistant Surgeon. Detached from the Bureau of Medicine and Surgery and ordered to the Vermont.

SIEGFRIED, C. A., Surgeon. Ordered to the U. S. Steamer Cincinnati.

LITHÆMIA:

ITS RELATION TO THE GOUTY STATE; ITS COMPLICATIONS AND TREATMENT.

By JOHN V. SHOEMAKER, A. M., M. D.,

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS,
AND CLINICAL PROFESSOR OF SKIN AND VENEREAL DISEASES,
IN THE MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA, ETC.

During the past year my attention has been especially attracted to the number of cases which I have seen, both in private and hospital practice, of patients presenting, as Fothergill would say, "the protean manifestations of gout," but which we are now accustomed to group under the comprehensive title of "lithæmia," for our knowledge of which we are especially indebted to Murchison and Da Costa. It has occurred to me that the financial panic and prevailing depression in business circles has increased the anxieties and causes of nervous strain among the people to such an extent as to seriously affect the health of the community. At all events, if moral and emotional causes may precipitate an attack of acute gout, which is generally believed to be the case, then it is not altogether beyond the bounds of probability that depressing and annoying circumstances, with accompanying disturbance of digestion, might in a strictly analogous way produce the condition of lithæmia. This view is rendered more probable since Professor Da Costa has recently stated it as his conviction that the latter is the form which gout principally assumes in the United States; in fact, he calls lithæmia "American gout."

As some of the cases which I have seen recently have presented symptoms, such as neuralgic or myalgic pains, skin eruptions, and digestive disorders, the gouty origin of which was not previously suspected, but which was demonstrated by the treatment, I have thought it well to make a brief record of a few of them, principally to illustrate the method of treatment and to report its results.

Before quoting any clinical histories, however, it may be as well to briefly review the modern doctrine of the pathology of the gouty state. By doing this it is possible that its relation to lithæmia and its complications, and also the *rationale* of the treatment, may be more clearly understood. Although gout was very well known to the ancients from the clinical point of view, its actual nature was entirely unknown until Garrod announced his discovery of the excess of uric acid in the blood. He showed that in chronic gout the blood, even in the intervals between the exacerbations, was always rich in uric acid; while in the acute attack, even when the urine shows a deficiency of uric acid, "it exists in the blood in abnormal quantities."

Sir William Roberts has further shown that in gouty persons and conditions there is a tendency to the formation of urates which are less soluble than the normal form, and that, therefore, a precipitation is liable to occur in favorable locations, such as in the neighborhood of joints and in the auricles. The following is a brief abstract of his views on the chemistry of uric acid, gravel, and gout, as expressed in the Croonian Lectures delivered last year before the Royal College of Physicians of London. With Garrod, A. Haig, and others, he regards the accumulation of the biurate of sodium and its deposit in various tissues as the most characteristic feature of gout. "The arthritic incidents of gout may be said, not improperly, to be simply incidents pertaining to the precipitation of these crystals in the structures of the joints." He further declares that "were it possible for us to keep the sodium biurate in a state of solution in the bodily fluids, the clinical portraiture of gout would be completely transfigured." Fortunately, it appears that in Buffalo lithia water Nature has provided us with an agent the action of which is mainly to accomplish the solution of the sodium biurate and to carry it off, with other principles of waste, through the ordinary channels of excretion, out of the body. Its *modus operandi* being comprehended, it is evident that the clinical portraiture of gout may be transfigured by the use of just such a simple agent, which, by the way, has the rare advantage of being free from toxic or injurious qualities.

Some of the details of the investigations made by Sir William Roberts possess considerable therapeutic interest. Thus, he carefully determined the solubility of sodium biurate in water, blood serum, synovia, and in other fluids, and found it very sparingly soluble; in fact, not more than one part in ten thousand of these fluids. Experiments were next made to test the solubility of sodium biurate in various saline solutions, particularly those of sodium, potassium, calcium, magnesium, and ammonium. Instead of increasing the solvent power of the menstruum kept at the temperature of the human body, the addition of any of these salts lessened such solvent power to a marked degree, except those of potassium, which appeared to exert no influence. It was further ascertained that the influence of the salts depended entirely upon the nature of the base and not on their acid or alkaline reaction. By another series of experiments the same observer appears to have succeeded in showing that when uric acid is added to blood serum, or synovia, at the temperature of the body, it enters into combination with the sodium carbonate, forming first a quadrurate, but subsequently it takes another atom of the base and becomes a biurate of less solubility, and hence precipitates in the crystalline form. These changes are supposed to represent what actually takes place in an attack of gout. While the quantity of uric acid in the blood and synovial fluids remains small, it is held in solution and eliminated as a quadrurate, but when the proportion becomes excessive, it changes to a biurate and soon precipitates, bringing with it the active phenomena of gout.*

There is entire agreement among authorities as to the clinical symptoms and the immediate underlying conditions of the gouty state, but as regards the efficient cause of the excessive formation of uric acid and abnormal urates there is still a lack of agreement among the pathologists. Fothergill thought that it was due to the liver, and explained it quite ingeniously on the ground of comparative physiology. His assertion was that "gout is hepatic reversion—the formation of primitive urine products by a mammalian liver." Vindevogel, in a monograph upon the

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* *Annual of the Universal Medical Sciences*, 1893, vol. i, section K, p. 7.

Nature, Causes, and Conditions of Gout,* alleges as an essential part of the pathology of gout an enfeeblement or lessened activity of the trophic nervous centers and a loss of equilibrium between the processes of assimilation and disassimilation, by which the products of disintegration are rendered incomplete or toxic to the economy.

Quite recently Professor Da Costa, in discussing the subject of lithæmia,† states that there may be other excrementitious or pathogenic principles at fault besides uric acid, and strongly objects to narrowing the consideration to a single chemical substance. He believes that this is taking entirely too restricted a view of the condition. For him lithæmia is a morbid state in which the income of nutrition is in excess of the outgo of waste. The quantity of food is greater than either the needs of the system require or the organs of excretion can properly dispose of. There is defective oxidation as well as deficient elimination. The consequence of the excessive ingestion of food is that the functions of the liver are imperfectly performed, and there is generally more or less hepatic disorder. The blood contains urates in excess and frequently oxalates, also other imperfectly elaborated products of waste; possibly it may be yet further poisoned by ptomaines resulting from imperfect gastric and intestinal indigestion.

It seems evident, therefore, that while a great difference of opinion exists as to the ultimate cause of gout, whether it be of nerve or blood origin or due to failure of liver, kidneys, or the digestive organs, all authorities are in accord upon one thing, and that is that the condition to which our therapeutic efforts must be directed in order to relieve the patient is an excess of uric acid and other waste products in the blood. It is to this condition that the symptoms and sequelæ are now generally attributed.

It is quite probable that there may also be a failure of the glands of the skin to properly perform their functions, as has been asserted by some observers. At all events, it can easily be shown that certain forms of eruption upon the general surface are of a gouty nature and are curable by applying the treatment suitable for the underlying gouty condition. Among the notes of cases that are referred to in this paper one or two will be found which furnish a good illustration of this fact.

Having thus hastily reviewed the pathology of the gouty state, and indicated the conditions required to be fulfilled by the therapeutic method in order to remove this condition, I will now proceed to briefly narrate the history of a few cases which illustrate the benefit of such treatment.

CASE I. *Dyspepsia accompanying Lithæmia.*—Miss L., single, aged twenty years, applied to me for treatment for acid dyspepsia, with flatulent eructations, heartburn, and frequent headache. Examination of the urine, which was rather scanty, high-colored, acid, specific gravity 1·024, showed a deposit of urates and oxalates, and gave a clew to the cause of the dyspeptic symptoms. She was directed to avoid articles of food containing sugar or glucose, to eat meat sparingly, and to take fresh-air exercise each morning. Her medical treatment consisted of half a glassful (f ℥ iv) of Buffalo lithia water three or four times a day. This afforded prompt relief, and the symptoms all disappeared in the course of a few days.

CASE II. *Chronic Gout.*—Mrs. W., aged thirty-three years, a victim of inherited gout, complained of muscular pains and neuralgia in different parts of the body. Her digestion was poor, and she was inclined to acidity of the stomach. The same treatment as in the preceding case afforded prompt relief.

CASE III. *General Muscular Rheumatism of Lithæmic Origin.*—George R., aged eighteen years, a clerk in a store, complained of pains in different parts of his body with tenderness in the muscles of his back and in the calves of his legs and shoulders. He had no fever. All muscular labor was irksome, and he complained of being constantly tired. He was ordered four ounces of Buffalo lithia water four times a day and good diet. The result was complete recovery in less than a week.

CASE IV. *Subacute Gout in the Fingers and Toes.*—Mr. R. S., aged fifty-three years, a merchant, presented himself with gouty deposits around the small joints of his fingers and toes. In the affected articulations there was also impairment of motion and a moderate degree of inflammation, with pain and tenderness. There was no fever. He had never had an acute paroxysm of gout, although of gouty family. He was ordered an aperient now and then, with a restricted diet and Buffalo lithia water, the latter in five-ounce quantities four times a day. This was followed by the disappearance of all the symptoms of gout, at least for the present.

CASE V. *Periodic Attacks of Gravel.*—Julius R., fifty-two years of age, a commercial traveler, complained of passing gravel; with this there was lumbar pain and a slight increase in temperature. The urine contained crystals of uric acid with urates and a small amount of albumin. No casts were detected. He had been subject to similar attacks for four or five years, coming on at times, probably connected with irregularities in eating. He was given two ounces, afterward increased to four, of Buffalo lithia water every two hours, with ordinary attention to his diet. This gave immediate relief and was followed by recovery.

CASE VI. *Gastric Catarrh.*—Mr. R. P., aged forty years, a bookkeeper, of somewhat irregular habits, presented the ordinary symptoms of mild gastritis, or what is often termed gastric catarrh. After a preliminary dose of calomel and soda, he was ordered to take Buffalo lithia water as his sole drink, using about two pints daily. His diet was restricted to light articles of food, which did not require gastric digestion. As his general condition seemed good no other medication was considered necessary. Rest in bed for two days was advised, followed by moderate exercise. The lithia water was subsequently reduced to four ounces four times a day, and the patient reported himself as perfectly recovered at the end of a week.

CASE VII. *Acute Rheumatism in a Lithæmic Patient.*—Fannie S., aged thirteen years, a school-girl. This patient was in bed with swollen knee and ankle joints, fever, and, in fact the usual clinical appearances of acute rheumatism. As there was a gouty tendency in the parents, I gave her the lithia water in two-ounce doses every two hours, the interval increased to three hours as the symptoms subsided. This was followed by relief from all the symptoms, with free action of the skin and kidneys, and in the course of the first week she entered an easy and rapid convalescence.

CASE VIII. *General Articular Rheumatism.*—William B., aged seventeen years, working in a dry-goods store, and who had been exposed to cold and wet, had an attack of articular rheumatism especially affecting the knees and ankles. He was given three or four ounces of Buffalo lithia water every four hours, with hot drinks to increase the action upon the skin.

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* Brussels, 1892.

† Editorial, *Medical News*, March 17, 1894.

The case gradually improved and made a good recovery. No salicylates or coal-tar preparations were employed in this case. He made a good recovery without any complication.

Case IX. *Confirmed Gout.*—Mrs. Q., aged sixty years, complained of pain and tenderness in her fingers and toes, which were much deformed by gouty deposits. In this case the large joints were also stiff and painful on motion. Her general nutrition was poor, and she had some cardiac hypertrophy with increased arterial tension. The arteries showed atheromatous thickening and there was a systolic murmur indicating aortic valvular disease, but without marked stenosis. She was ordered a suitable diet and recommended to change her residence to a more appropriate climate, where she could spend much of her time in the fresh air. In the meantime she was to take four to five ounces of Buffalo lithia water from five to six times a day. The latter treatment was attended with the best results; the pain disappeared from the joints and the swelling around them was materially lessened. She felt so much better that she could not be induced to take the other part of the prescription which called for a change of climate, since she found herself so much benefited by the water that she did not consider it necessary to leave home.

Case X. *Gout of the Feet with Eczema.*—Mr. R. B., aged forty-nine years, has chronic gout in the feet, with deformity which interferes to some extent with walking. He also presented an eczematous eruption around the flexures of the thighs and on both arms. He was ordered from one to two pints of Buffalo lithia water daily. His diet was restricted and a mild aperient given, to be used three or four times a week, or every day if found necessary. As much exercise in the open air as could be taken was insisted upon, which was not much at first but soon increased, so that he spent most of his time out of doors. This treatment enabled him to overcome the gout, and to get rid of the eczema as well, in the course of three months.

Case XI. *Gouty Dyspepsia.*—William F., aged thirty-six years, had gouty deposits in the fingers on both hands. At present he is suffering with acid dyspepsia, for which he had used ordinary remedies without relief. He was ordered to take one ordinary glassful of hot Buffalo lithia water on rising each morning. About half the quantity, also hot, he was directed to take before his dinner and supper, and again a full glass at bedtime. Under a few days of this treatment the dyspepsia entirely disappeared and the swelling in the hands was very much ameliorated.

Case XII. *Lithæmic Diabetes and Eczema.*—Lizzie C., aged forty-four years, had an eczematous eruption of a chronic character upon different parts of her body. She also had acidity of the stomach. Examination of her urine revealed the presence of a considerable proportion of sugar. Her diet was carefully regulated, and she was directed to live principally upon the green vegetables, poultry, and fish. Fresh-air exercise was also insisted upon as an important part of the treatment. Three or four ordinary glassfuls of Buffalo lithia water were directed to be taken every day. Under this simple treatment all the symptoms were alleviated and she steadily improved. When her stomach was in a condition to bear it, she was given ergot and iron, and the disease has been thus kept in abeyance.

Case XIII. *Psoriasis with Rheumatic Symptoms.*—Mr. R. W., aged twenty-nine years, had general psoriasis, distributed over the surface of his body and extremities. The disease had developed gradually since its first appearance more than a year before. He also was subject to attacks of what he called rheumatism, every now and then, probably connected with errors in diet. Under the use of Buffalo lithia water, a glassful four to six times daily, the symptoms slowly but surely yielded; ten grains of salicin were subsequently added to each dose of the water. When I last saw this patient he was in good general health, without any rheumatism or indigestion, and the psoriasis had faded so as to be scarcely visible.

Case XIV. *General Eczema with Acid Dyspepsia.*—Mr. W. A., aged thirty-four years. This patient had eczema of his entire body. He also had acidity of the stomach and an acid urine, and attacks of pain in the bowels of a colicky character. His diet was regulated and he was directed to take exercise in the open air. His medical treatment consisted solely of Buffalo lithia water as in most of the preceding cases, four or five ounces several times a day. The result was a speedy recovery.

SIMULTANEOUS DISLOCATION OF BOTH SHOULDERS.

By CHARLES A. POWERS, M. D.

This injury is not of frequent occurrence. On this account, and because of the distinct manner in which the accident occurred, brief narration is made of the following:

Case.—On December 21, 1893, I was asked by Dr. Geoffrey R. Bourke to see Mrs. M., a stout woman of sixty-five years, who had sustained an accident three weeks previously.

On December 1st, while walking from one room to another, she had tripped on a piece of carpeting, falling forcibly forward, both arms being raised above her head and the weight of the body being received on both outstretched forearms and elbows. There was some shock, for which she had been treated by a neighboring physician. She had remained in bed, unable to use the arms. When examined by me both shoulders were found to be dislocated, the left beneath the coracoid process, the right into the axilla.

Under ether the moderately firm adhesions were gradually broken up by gentle manipulations, the right shoulder going back at the end of fifteen minutes, the left in about five minutes.

Double sling and body bandage for four weeks. The patient suffers with chronic rheumatism; the functions have been slow in returning, and are not yet complete.

OPERATION AND AFTER-TREATMENT FOR NON-MALIGNANT STRICTURE OF THE RECTUM.

By J. L. MEDINA, M. D.,

EX-HOUSE SURGEON OF THE FRENCH HOSPITAL;
ATTENDING SURGEON TO THE FRENCH HOSPITAL'S DISPENSARY;
ATTENDING PHYSICIAN TO THE NORTHWESTERN DISPENSARY.

Whenever an operation for the cure of non-malignant stricture of the rectum is described, most of our text-books and standard works recommend as the best "Verneuil's" operation. This consists in the division of the stricture in the posterior median line by a single incision. The after-treatment consists in the use of rectal bougies passed at intervals, usually beginning a few days after the operation.

I will relate now the history of a case that I operated lately, following an entirely different plan, obtaining the most successful results:

Miss L. H., thirty years of age, single, has suffered for the last three years with continuous muco-purulent discharges from the rectum. The act of defecation was very difficult and generally accompanied by most distressing pain. Had dysentery some years ago. There was no specific history.

I saw the case in consultation first, and, upon examination, I found a circular stricture, beginning two inches and a half from the anus, extending upward for an inch and a half. The lumen of the rectum at the seat of the stricture was only about a third of an inch in diameter. There was considerable ulceration above the stricture produced by the constant accumulation of fæces. The diagnosis of non-malignant stricture was made, and I advised an operation as the quickest permanent cure.

Later on I was requested by her physician to operate upon her. She was admitted into the French Hospital on the 5th of March, and prepared for operation the next day.

Operation.—The patient, being under ether, was placed in Sims's position. The anus was dilated, and then I passed into the rectum a small Sims's vaginal speculum, using the blade toward the anterior rectal wall, protecting in this manner the posterior vaginal wall from any possible injury. None of the many different rectal speculæ will give a more ample field to work upon than this.

Now I performed proctotomy in the posterior median line, but not by a single incision, as has been recommended, but by a double one, a quarter of an inch apart and meeting in the median line, removing a V-shaped piece through the whole length and thickness of the stricture. Dilatation was now performed without any resistance. During the operation one of the little branches of the middle hæmorrhoidal artery was severed, but the hæmorrhage was stopped at once by torsion.

The practice of beginning to pass bougies a few days after the linear division of the stricture seems to me to be the cause of many unsuccessful operations of this kind, as, in all probability, by that time the incision is united again, leaving the stricture in the original condition. Such being the case, bougies will not do more benefit than they did before an operation was undertaken. To avoid this I left in the rectum one of Sims's vaginal plugs, an inch in diameter by three inches and a half in length.

I removed the plug twenty-four hours after the operation, and treated the wound and ulcerated surface antiseptically with a solution of creolin, blowing in some iodoform, and replaced the plug. This was repeated every day.

The only objection I found in using Sims's vaginal plug for this purpose was that it keeps the anus dilated as much as the stricture, and has no opening for the escape of gases. To meet this defect I have designed a rectal plug. This is made of glass, hollow, with a constriction at the base, so that the anus will remain unstretched; then a straight portion, its length according to the length of the stricture. The end is slightly pointed and with several small holes for the exit of discharges.

The patient never had any pain or rise of temperature. She slept from the first night with the plug in without any discomfort at all. During the day she removed it, and replaced it herself only when about to have a passage.

She left the hospital seven days after the operation and went home, where I treated her in the same way, with the only addition of passing a larger plug (an inch and an eighth in diameter) for an hour three times a day.

At the end of the second week I sent her back to her own physician, as we had agreed. Lately I was informed by him that not a trace remains of the stricture, that all the cicatricial tissue had disappeared, declaring that the operation, at which he was present, had been a complete success.

I think that such a satisfactory result was due only to the V-shaped incision and to the constant dilatation from the time of the operation without waiting a few days, as has been the practice.

316 WEST THIRTY-FOURTH STREET.

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THE EDIBLE MUSHROOMS OF THE UNITED STATES.

THERE has recently been issued from the Government Printing Office an important pamphlet entitled *Twelve Edible Mushrooms of the United States, with Directions for their Identification and their Preparation as Food*, by Dr. Thomas Taylor, chief of the Division of Microscopy of the Department of Agriculture. The importance of the subject need not be insisted upon to the few who know how immensely superior the fresh American mushrooms are to those imported from Europe—as Mr. William Falconer, of Glen Cove, N. Y., puts it, in a summary contained in Dr. Taylor's pamphlet of a paper read before the Massachusetts Horticultural Society for February, "Many persons who have used the tasteless, indigestible, putty-balls from imported cans will repudiate the foreign article and accept no other than the wholesome, toothsome, and juicy domestic product." In this statement Mr. Falconer has reference to the time when, as he foresees, the production will have been so increased as to reduce the price from a fictitious to a popular basis. Dr. Taylor describes the following species: *Lactarius deliciosus*, *Cantharellus cibarius*, *Marasmius oreades*, *Hydnum repandum*, *Agaricus campestris*, *Coprinus comatus*, *Morchella esculenta*, *Clavaria cinerea*, *Clavaria rugosa*, *Boletus edulis*, *Lycoperdon giganteum*, and *Fistulina hepatica*. All these species are shown in colored lithographs and described sufficiently for their identification in the text, in which, moreover, directions are given for gathering, preserving, and cooking each one. In an appendix the reader is instructed how to cultivate mushrooms, and Mr. Falconer's description of a new species, *Agaricus subrufescens*, is quoted.

Dr. W. P. Gibbons, of Alameda, Cal., the chairman of the committee on indigenous botany, materia medica, pharmacy, and medical chemistry of the Medical Society of the State of California, read at the recent meeting of that society—for the advanced proofs of the report of which we are indebted to the *Occidental Medical Times*—a paper entitled Some of the Poisonous Plants of the Pacific Coast. In that paper he showed that our American mushrooms were much neglected as an article of food and as a substitute for meat, owing to their bad reputation among those who were unable to discriminate between the edible and the noxious species. While, he said, there was no doubt that sickness and death had resulted from eating certain varieties, among the most poisonous of which he classed the *Amanita muscarius*, formerly used as a fly poison, such accidents were to be attributed as a general thing to gathering the mushrooms at an unseasonable time and to neglect of the proper precautions in preparing them for the table rather than to any fixed poisonous principle in the plant. Even the *Amanita mus-*

carius, he said, was eaten by the Russian peasants after they had prepared it with salt and vinegar. It appears, however, that it is not enough to be able to discriminate between the different varieties of fungi, for mushrooms that are in themselves innocuous are apt to be attacked by flies and other insects which impart poisonous properties to them. Dr. Gibbons showed a small bottle containing minute coleopterous insects and another containing myriads of their larvæ, not distinguishable by the unassisted eye from fine dust. These had been taken from a specimen of *Polyporus*. He concluded by stating that there was no general rule by which edible mushrooms could be distinguished from noxious ones; in all cases they should be well treated with salt and vinegar before being cooked.

THE MANAGEMENT OF SYPHILITIC MARRIED WOMEN.

M. Alfred Fournier, whose high attainments as a syphilologist are matched by his insight into human nature and by the purity of his ethical instincts, who, moreover, is well known to have made a special study of venereal diseases in their relation to the married state, lately devoted a lecture to the consideration of the physician's duty when a married woman seeks his advice for a trouble which he ascertains to be syphilis. The substance of M. Fournier's lecture is published in the *Gazette de gynécologie*, in the form of a *feuilleton*. The question is, when under such circumstances the woman asks to be informed as to the nature of her disease, What is the physician to do? If he tells her point blank, supposing her to be a virtuous wife, the husband is at once involved in the unenviable situation of having married while yet the subject of communicable syphilis or else accused of having subsequently contracted the disease by illicit intercourse. In either case the prospect is that of domestic discord and scandal, to say nothing of the unpleasant consequences to the physician himself, such as the husband's reproaches at the breach of secrecy. If, on the other hand, the wife has been infected by a paramour and remains ignorant of the nature of her disease, she is almost sure to give it to her husband. The question then is complicated and the situation delicate.

M. Fournier is of the opinion that whenever the physician is satisfied that a safeguard can be thrown around his patient only by his keeping silence, he is warranted in doing so, and in the case of a wife the prerogative rises to the level of a professional duty. But when the woman is of loose morality, such reticence may become dangerous; such a patient should be warned that she is tainted with a contagious disease, and told that it is incumbent on her to guard sedulously against spreading it. In a general way and to his own satisfaction for ordinary purposes, one may have no hesitation in concluding whether his patient is virtuous or not, but in such a grave situation what is wanted is to settle upon a course of procedure that leaves nothing to surmise. The best way is to suggest to the woman that her husband's co-operation in the necessary medication, etc., is desirable; if she assents, she is innocent, but, if she raises objections, she is culpable. In any event, however, the physician should not confer with the husband without the wife's consent. It is true that to suggest such a conference may be to arouse suspicions and precipitate consequences that it is desirable to avoid, but, on the whole, this course is the least objectionable.

THE ANOMALIES AND COMPLICATIONS OF CHICKEN-POX.

In the *Revue internationale de bibliographie médicale, pharmaceutique et vétérinaire* for April 25th there is a summary of an article on this subject by Dr. L. Galliard, published in *La Médecine moderne* for January 13, 1894. The author maintains that in certain cases chicken-pox may be a serious disease, capricious in its course and difficult of diagnosis. The characteristic eruption of vesicles may in a few cases—there are twelve on record—be preceded, accompanied, or followed by a rash, which is usually like that of scarlet fever, commonly lasts for twenty-four hours, and is accompanied by fever, but is apparently destitute of any prognostic significance. The varicellous vesicles may be very few, most of the lesions being arrested in the papular stage. This is the papular form of varicella. They may be very confluent or attain extraordinary dimensions (bullous or pemphigoid varicella), or become pustular (globo-pustular varicella). The exanthem is not restricted to the skin, but invades the mucous membranes also.

The author reports a case in which varicellous angina and stomatitis were so intense as to cause the patient great suffering and impress upon the disease a seal of gravity well worthy of attention. This case was characterized, moreover, by the absence of vesicles on the integument and by the purely papular formation of the cutaneous exanthem. In several instances hæmorrhages have been noticed in chicken-pox. Bleeding from the nose is frequent; the other hæmorrhages are exceptional. As to true hæmorrhagic varicella, it is a clinical rarity. Henoch and subsequent observers are mentioned as having described a varicellous nephritis which, although generally benign, may be a grave complication and even lead to death. Therefore the urine should be examined in all cases. Pseudorheumatism is a very exceptional complication; only two cases are known. Gangrene is the most formidable of the complications of chicken-pox, and it is the one that has longest been known. At the outset of the disease there is nothing to show that this complication is about to occur; it makes its appearance in cases that are apparently the simplest. The gangrene generally shows itself at the margin of the vesicles, which ulcerate, and the mortification proceeds from one to another. Death is the usual result, but recovery has been observed. A case of gangrene of the limbs in consequence of arterial obstruction has been cited by Bellamy. Among the other possible complications of varicella mentioned by Galliard are furuncles, abscesses, and erysipelas.

MINOR PARAGRAPHS.

THE INFLUENCE OF OOPHORECTOMY ON THE VOICE.

According to an account given in the *Progrès médical* for May 5th, Dr. Moure, of Bordeaux, stated at a recent meeting of the *Société française d'otologie* that in two women who had undergone this operation he had observed that the voice had become strong and coarse. One of them, who had originally had a soprano voice, had lost her high notes and almost become a contralto. The laryngoscopical examination had not shown any anomaly of the vocal organs. Dr. Moure asked if such disturbances of the voice might not be attributed to elongation of the vocal bands or to a more considerable development of the thyreoid cartilage.

MIGRAININE.

Overlach (*Dtsch. med. Woch.*, 1893, No. 47; *Rev. internat. de bibliog.*, etc., Apr. 10, 1894) has given this name to a mixture (in unmentioned proportions) of antipyrine, citric acid, and caffeine. The ordinary dose for twenty-four hours is said to be about seventeen grains, which may be increased to forty grains. It is alleged not only that it cuts short the attacks of migraine, but that it lessens their frequency. It is reported to have been found useful also in headache due to influenza, alcohol, tobacco, and morphine.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 29, 1894:

DISEASES.	Week ending May 22.		Week ending May 29.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	6	1	5	3
Scarlet fever	136	10	136	17
Cerebro-spinal meningitis	4	3	3	1
Measles	162	10	146	8
Diphtheria	237	67	258	67
Small-pox	11	6	55	3

Change of Address.—Dr. George C. S. Choate, to No. 85 Madison Avenue.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 20 to May 26, 1894:*

Ball, Robert B., Captain and Assistant Surgeon, is relieved from temporary duty at Fort Monroe, Virginia, and ordered to Fort Adams, Rhode Island, for duty, relieving Borden, William C., Captain and Assistant Surgeon. Captain Borden, on being thus relieved, is ordered to Fort Snelling, Minnesota, for duty at that post, relieving Mason, Charles F., Captain and Assistant Surgeon. Captain Mason, on being thus relieved, will report in person to the superintendent of the United States Military Academy, West Point, N. Y., for duty at that post.

Chapin, Alonzo R., Captain and Assistant Surgeon, is relieved from duty at Fort Hancock, Texas, and ordered to new Fort Bliss, Texas, for duty.

Winter, Francis A., First Lieutenant and Assistant Surgeon, is relieved from duty at new Fort Bliss, and from temporary duty at old Fort Bliss, Texas, and ordered to Fort Hancock, Texas, for duty at that post.

McCreery, George, Captain and Assistant Surgeon, will, upon the abandonment of Fort Sidney, Nebraska, report in person to the commanding officer at Fort D. A. Russell, Wyoming, for duty at that post.

Cleary, Peter J. A., Major and Surgeon, is granted leave of absence for four months.

Spencer, William G., Captain and Assistant Surgeon, having been found incapacitated for active service by an army retiring board, will proceed to his home.

Town, Francis L., Lieutenant Colonel and Deputy Surgeon General, is relieved from temporary duty in the office of the Medical Director, Department of the Missouri, and will report in person to the commanding general, Department of Texas, for duty as Medical Director of that department.

Wilson, William H., First Lieutenant and Assistant Surgeon, now on duty at Fort Leavenworth, Kansas, will proceed at once to Camp Merritt, Montana, and report for assignment to temporary duty at that post.

Baily, Joseph C., Colonel and Assistant Surgeon General, died on May 16, 1894, while *en route* from El Paso to San Antonio, Texas, in the line of duty.

Society Meetings for the Coming Week:

Monday, *June 4th:* German Medical Society of the City of New York; Morrisania Medical Society (private), New York; Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Corning, N. Y., Academy of Medicine; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society.

Tuesday, *June 5th:* American Medical Association (first day—San Francisco); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Columbia (semi annual—Chatham), Franklin (semi-annual), Herkimer (annual—Herkimer), Niagara (annual—Lockport), Orange (annual—Goshen), Saratoga (annual), Schoharie (annual), and Yates (annual), N. Y.; Hudson (Jersey City) and Warren (annual), N. J., County Medical Societies; Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *June 6th:* State Medical Society of Wisconsin (first day—Milwaukee); American Medical Association (second day); Ontario Medical Association (first day—Toronto); Society of the Alumni of Bellevue Hospital, New York; Harlem Medical Association of the City of New York; New York Academy of Medicine (Section in Public Health); Medical Microscopical Society of Brooklyn; Medical Societies of the Counties of Cattaraugus (annual) and Richmond (Stapleton), N. Y.; Orleans, Vt., County Medical Society (annual); Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

Thursday, *June 7th:* Rhode Island Medical Society (first day—Providence); Michigan State Medical Society (first day—Lansing); State Medical Society of Wisconsin (second day); American Medical Association (third day); Ontario Medical Association (second day); New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

Friday, *June 8th:* Rhode Island Medical Society (second day); Michigan State Medical Society (second day); State Medical Society of Wisconsin (third day); American Medical Association (fourth day); Brooklyn Dermatological and Genito-

urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.
Saturday, *June 9th:* Obstetrical Society of Boston (private).

Letters to the Editor.

GONORRHŒA WITHOUT COITUS.

Montreal, *May 26, 1894.*

To the Editor of the New York Medical Journal:

Sir: Being much interested by the letter from Dr. Foster Bush in your issue of April 7th on Chancre of the Genitals without Coitus, I thought that an account of a similar case which came under my care would be equally interesting.

A gentleman called upon me to request my attendance on his wife, who was suffering from great frequency and painfulness of micturition, together with a profuse yellow discharge from the vagina. On close questioning he admitted that he was then under the care of another physician for gonorrhœa, which disease I found, on examining his wife, he had communicated to her, thick yellow pus being easily squeezed from the urethra. The more disagreeable symptoms were readily relieved under the usual treatment, and the patient was finally apparently cured. At my second visit this lady called my attention to her little daughter, about three years of age, whose genitals were bathed in pus, which was pouring from the vagina, and was excoriating the neighboring skin on the thighs. The mother had been kept in ignorance of her husband's unfaithfulness, and did not know until my first visit that her disease was a contagious one. She had in consequence used the same towel for herself and the child, thereby communicating the disease to the latter. At least I presume that it was communicated in this way, as the child occupied a separate bed. The discharge was very similar to that seen in the non-specific inflammation of the vulva of strumous and dirty children, with the exception that it seemed thicker and yellower than is found in the latter. This case was also somewhat difficult to cure, and I have no doubt that it spread up to the uterus and tubes. Gonorrhœa in little girls may also be the cause of atresia of the vagina, stricture of the urethra, and closure of the uterine or even of the fimbriated ends of the tubes, sometimes found in perfectly innocent and unmarried women. If this girl had been eighteen instead of three years old, I might have doubted her chastity, so that in this connection we should bear in mind the possibility of both gonorrhœa and chancre occurring without coitus.

A. Lapthorn Smith, M. D.

Proceedings of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Third Triennial Meeting, held in Washington on Tuesday, Wednesday, Thursday, and Friday, May 29, 30, and 31, and June 1, 1894.

The President, Dr. Alfred L. Loomis, of New York, in the Chair.

Morphology as a Factor in the Study of Disease.—The first scientific session was in charge of the Association of American Anatomists, and this was the subject for discussion.

Dr. Harrison Allen, of Philadelphia, opened the discussion. He defined morphology as "anatomy writ large," and said that, although it was often said that anatomy was complete, and nothing was left to be studied or discovered, this was far from being the case. Unfortunately it was taught now just about the same as it had been a century ago, everything that could not be applied in surgery being carefully excluded from the lecture hall. As an example of the influence of morphology on the study of disease, the speaker referred to the fact that the general shape of the gouty tooth was distinctive, and that likewise certain appearances of the nails were indicative of the gouty diathesis. Many of the fanciful theories and "schools" of medicine, such as that of the humorists, would have been impossible had the system of medicine been founded on a broad basis of morphological data. As examples of ætiological factors in morphology might be mentioned such conditions as œsophageal pouch and heart failure. The former condition was due to an insufficient number of circular fibers in the lower pharynx, resulting in a yielding of the muscular wall. The second condition was exemplified in athletes, who, it was well known, owed their staying power to certain inherited minute anatomical peculiarities in the structure of the heart. Anatomical facts were like the letters of the alphabet, their chief use being, in combination, to express ideas.

It was difficult to say to just what extent structures which were degenerate became on that account predisposed to disease. In conclusion, the speaker called attention to the fact that the biological material coming under our observation was almost always that of a highly domesticated or over-acclimated nature. Man had undoubtedly undergone changes in his organization precisely like those which existed in a domesticated animal when his organization was compared with that of an ancestral form. The change in the shape and proportion of the red blood-corpuscles in anæmia was an instance of degeneracy mimicking the process of normal evolution. A comparative study of the teeth in animals and in the human being would show some of the important bearings of morphology. Perhaps the best single conclusion to be drawn from the study of morphology as a factor in the study of disease was to be found in its great value to humanity. The scientific study of race in connection with diseased action was an almost unbroken field.

Dr. Thomas Dwight, of Boston, said that he did not share the pessimistic views of Dr. Allen as to the position of the medical profession in general regarding the study of anatomy. The remedy was not to be found in extending the course of instruction in anatomy in our medical schools, but in the efforts of teachers to impress their students with the fact that morphology had many practical applications in the study of disease. By so doing the student's horizon was enlarged, and he was better prepared to see in later years the value of further studies in higher anatomy. The younger members of the profession were already evincing an increased interest in this study, and did not look upon anatomy with the same aversion shown by many of their seniors in the profession.

Dr. Allen had pleaded for a longer and broader course of anatomy, and there were certainly many reasons for wishing that a more extensive and accurate knowledge of morphology was generally possessed. The expert auscultator could recognize the sound produced by the vibration of a band found occasionally stretched across the middle of the right ventricle—the moderator band of the ruminant; yet not only should he be able to recognize this, but should know that this sound was no indication of even functional disturbance of the heart. It was important for the surgeon to know that a fibrous or muscular band might be found crossing the axillary artery; also that the brachial artery might divide high up in the arm; that the diverging artery, whether the radial or the ulnar, almost always ran superficially; and that a third trochanter, by its apparent large size when felt through the soft parts, might be mistaken for an exostosis. If the importance of a knowledge of such anomalies was not sufficient, one need only recall the important bearing of the mechanics of the skeleton on the work of the orthopædic surgeon. The anatomy of childhood was but little known, as was well shown by the general ignorance of practitioners, who had in charge the feeding of infants, as to the rate of growth of the stomach of an infant.

Dr. Frank Baker, of Washington, said that it was impossible to study the phenomena of disease properly without due regard to the laws of morphology. Great advances had been made in our knowledge of the nervous system. It was possible that we might have to abandon in time the theory that the cell was the final unit of structure. If our observations could be sufficiently minute, we should probably find that the cells themselves, even in health, were as unstable as the drops of the ocean. Inflammation itself, that process so intimately connected with the phenomena of disease, could not be thoroughly understood without a knowledge of the structure of the tissues involved in this process. The different phenomena of inflammation seemed to be due to the cells of the vessel walls assuming their independent activity, finally proliferating and producing granulation tissue and the dense fibrous masses which ultimately formed scar tissue. The rapidly growing science of bacteriology was only a branch of morphology, for microbes were subject to the same general laws of growth as the cells of the body.

It should be remembered that in many respects the human body was not yet fully adapted to the erect posture, and that many diseased conditions could be traced to this fact. It had long been known that the valves of the veins were not well adapted to the erect posture, and even the heart itself worked to great disadvantage, having to pump the blood to a much higher level. In the nervous system it was well known that disorders of function first appeared in the higher or more recently established portions. In a word, it might be said that morphology was a growing science, and one promising much for the elucidation of the highest problems of medicine.

Dr. Burt G. Wilder, of Ithaca, N. Y., said he had understood Dr. Allen to say that structure was the record of function and pathology the record of disordered function; in other words, that there was no psychosis without a neurosis of some kind. Certainly the tendency was for psychiatrists, when they could not find anything in the brain to account for the clinical symptoms during life, to assume that they were present in the brain nevertheless. This, he would suggest, was not scientific.

The speaker then detailed the history of a suicide whose brain he had been carefully studying for the past month. The man was an educated person, and had presented many peculiarities during life. A matter of curiosity and interest connected with his death was the fact that he had shot himself through the head twice. As might be expected, the brain disclosed the most extraordinary combination of visceral lesions that the speaker had ever seen in any brain.

He believed with Dr. Baker that the human body was far from being a completed structure; more than this—he believed it to be the province of the medical man to improve the human body in the direction of the elimination of that death-trap, the appendix vermiformis. He understood that practicing surgeons were almost unanimous in the opinion that the removal of the non-gangrenous appendix was associated with no great mortality. Four years ago he had suggested that we should not only have children vaccinated, but should have them "de-appendicized." The only mammals near ourselves which were cursed with an appendix were the four anthropoid, tailless apes.

To the statement made by Dr. Dwight that nothing more should be added to the curriculum of our medical schools, he would say, "amen" and "amen." Morphology should be made a subject of common-school education. He predicted that in the near future most children before leaving the ordinary university would know fully as much about anatomy, physiology, and morphology as was now known by the average medical practitioner.

Dr. Allen said he did not wish to be considered a pessimist, but in many of our smaller cities anatomy was not so extensively used in practice as it should be. He would not add a moment to the time now given to the study of anatomy in our medical schools, but would urge the study of this subject in the preparatory schools. In his judgment, the teacher of anatomy should deal more than had been customary in the past with just such subjects as had been considered in this discussion.

(*To be continued.*)

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of May 1, 1894.

The President, Dr. M. Allen Starr, in the Chair.

Hysteria.—Dr. Effertz, of Vienna, presented a woman, aged thirty-five, who for the past sixteen years had had a contraction of the fingers and hand of both upper extremities and complete anæsthesia of the face and body. The patient was readily hypnotized, and while she was in the cataleptic state the contracted hands and fingers relaxed on suggestion. While under the influence of hypnotism the woman invariably presented a double convergent strabismus, which disappeared when she was roused. On suggestion, the contractures could be made to disappear temporarily. The anæsthesia was always present, but the patient never burned or injured herself. There was no ataxia. The corneal reflex was present. The patient suffered from hystero-epilepsy, and sometimes went into a condition of trance spontaneously. With the left eye she was totally blind; with the other eye the visual field was limited, and she did not see certain colors. There was loss of hearing on one side.

Dr. W. M. Leszynsky said he had examined the patient a few days before, and could corroborate Dr. Effertz's statements regarding the case. It was impossible to test the knee-jerk, as the leg immediately became rigid. She was readily hypnotized, but he had found it very difficult to awaken her.

Dr. M. Allen Starr, the retiring president, made a few remarks in which he referred to the success of the society during the past two years and its prosperous condition at the present time. Many of the papers presented had shown a high grade of excellence and had been important additions to neurology; the discussions, too, had brought out many points of great practical value. Dr. Starr then introduced the newly elected president, Dr. E. D. Fisher.

Thrombosis of the Cerebral Arteries.—Dr. Fisher, after a few preliminary remarks in which he outlined the proposed work of the society during the coming year, read a paper on this subject. He stated that the most common causes of thrombosis of the cerebral arteries were atheroma and syphilitic endarteritis. In atheroma the large vessels at the base were especially involved, but, on close examination, the smaller vessels, if traced up beyond the Sylvian fissure, would be found to have rigid walls which had lost their elasticity and were therefore subject to temporary interference with the course of the blood through them. This was particularly seen when Bright's disease was a complication or, indeed, as in most cases, a cause of the degeneration of the arterial walls. In syphilitic endarteritis it was said that the smaller arteries or capillaries were involved to a greater degree than in atheroma. The author would confine himself more particularly to the latter condition, associated with Bright's disease, as of late much had been written on the subject of uræmic hemiplegia.

The difficulty of diagnosticating this condition lay in the attempts to explain the distinct localization on the basis of uræmia as the cause. One might expect a paraplegia from the general effect of the poison on the cerebrum, or a general compression from the œdematous condition found in these cases, but not a localized paralysis. Autopsies had been reported, and several such had come under the author's observation, in which distinct hemiplegia had been present, and yet neither hæmorrhage nor thrombosis had been found to explain it. In most of the cases of uræmic hemiplegia reported disease of the vessels had also existed, although no other lesion, except in some cases serous effusion, had been found. Again, at times healthy vessels had been found, but perhaps with no greater frequency than apparently healthy vessels were found in cases of hæmorrhage or thrombosis. It was certainly not an uncommon experience, especially in syphilitic endarteritis, to see a hemiplegia entirely clear up, leaving little if any trace by secondary changes of the previous interference with the cerebral circulation. We found the same condition not infrequently in atheromatous conditions in old people. The most rational explanation seemed to be that there was a temporary occlusion or stasis, which in the diseased state of the vessel walls permitted of a localized serous exudation, so that we might feel justified in returning to the old term serous apoplexy.

The commonly accepted indication of thrombosis was a gradual onset of the paralysis, perhaps extending while the patient was still conscious and able to describe its course. The consciousness might not be affected at all, or it may be affected progressively, passing into complete coma, with stertorous respiration. This implied that a large artery had been involved. The temperature was not lowered at the onset, as a rule, as in hæmorrhage, but within twenty-four or forty-eight hours there would probably be an increase of temperature from the softening which followed. The other, later stages were not to be distinguished from those due to any other destructive lesion in the brain, except perhaps by the fact that the paralyzed parts were more frequently the seat of spasmodic movements. The loss of consciousness was explained by the anæmia of the brain and also as a result of the compression. The compression was the result of three causes: There was stasis in the vessel occluded and the veins beyond, as the latter, not receiving the *vis a tergo*, remained filled; there was also an exudation from the vessels which now acted as a compressive agent. The collateral circulation could hardly be considered as exerting compression on the affected part. The onset of the thrombosis was usually too gradual for us to consider the question of shock to the brain as a cause of unconsciousness. In the later stages of cerebral softening, which was now accepted as non-inflammatory and entirely dependent upon the cutting off of the blood supply, aided by compression from the exuded serum, we not infrequently found hæmorrhages in the course of thrombosis, as a result of the loss of the usual support of the healthy tissues to the already diseased vessels. This the author considered to be the explanation of some cases which began with symptoms diagnostic of thrombosis, but which within a day or two passed into deeper coma, perhaps after the recovery of consciousness soon after the initial lesion. The autopsy revealed a hæmorrhage, probably preceded by thrombosis.

Hæmorrhagic Necrosis of the Spinal Cord.—Dr. IRA VAN GIESON stated that the subject which he wished to present for consideration was what seemed to him to be an explanation of the nature and origin of certain long, slender columns of necrosis in the spinal cord, apparently associated usually with acute myelitis. These columns of necrosis were very remarkable in that they were narrow and circumscribed, and yet they might traverse long distances of the cord, above or below a circumscribed myelitis, while the surrounding structures of the cord were normal and showed no traces of inflammation or other processes which would produce such a necrotic column. For instance, seven or eight spinal segments above or below a circumscribed focus of myelitis might be pierced by a continuous streak or narrow column of necrosis, running through either the gray or the white matter, while the segments thus traversed by the necrotic columns were quite normal, with the exception of secondary degeneration in the various fiber tracts of the white matter. In addition, these necrotic columns in the spinal cord showed a tendency to the formation of cavities in them. The tissue was liable to become so much liquefied or disintegrated by the necrotic process in places along the distribution of the column that a cavity or tiny tubular canal was produced which was sharply circumscribed and quite variable in extent.

These cases were seemingly of exceedingly rare occurrence. The author knew of but two published cases, one of which had been associated with an acute circumscribed myelitis of very sudden onset, while the second had followed a myelitis of severe traumatic origin. Both the patients lived for three or four months after the onset of the myelitis. The first case was that of Dr. C. L. Dana, published in the *Alienist and Neurologist* for April, 1889, under the title of Acute Transverse Myelitis with Perforating Necrosis of the Whole Dorsal Cord; Ascending and Descending Degenerations. Dr. Dana had excluded bacterial action in the formation of the perforating necrosis, and had seemed to be at a loss to determine the origin of the process. The second case was the author's, and it had been published in the *Transactions of the New York Pathological Society* for 1891 under the title of A Case of Traumatic Myelitis in the Lower Dorsal Region, with a Central Column of Necrosis extending above the Lesion throughout the Whole Dorsal and Cervical Regions. In this case the necrotic column and canal had had no pyogenic or other lining membrane; the case had been entirely distinct from myelosyringosis; there had been absolutely no signs of inflammation in the surrounding cord structures, and the author had been at a loss to understand the occurrence of such a long necrotic column in the midst of the normal portion of the cord.

Within the past two years he had had an opportunity of studying two cases of acute myelitis, with hæmorrhage, which afforded a very simple explanation of the lesions of perforating necrosis. In brief, this peculiar process seemed to be produced primarily by long, slender columns of spinal-cord hæmorrhage associated occasionally with cases of acute myelitis, chiefly those of violent traumatic origin, with fracture of the spine, so that there was a more or less severe crush or bruise of the cord occurring *intra vitam*. Then, after a period of several weeks, these columns of hæmorrhage above or below, or extending both ways from the damaged cord segment, broke down, and perforating necrosis was the result.

The author then gave the histories of two cases of traumatic spinal-cord hæmorrhage which had recently come under his observation, and showed the close relationship which they bore to the production of these long columns of necrosis or partly necrotic canals in the spinal cord, which were thus far known as perforating necrosis. In both these cases there had been violent trauma, which fractured the spinal canal and produced a crushing bruise, with disintegration of one or more segments. Both the patients had died within forty-eight hours after the accident, thus allowing the lesions to be studied before the development of any extensive myelitis or necrosis. In the first case the lesion had consisted of a disintegration of the cord at the eighth cervical segment and hæmorrhage in the two segments above and below this, shown especially on the left side of the cord. In the second case there had been a fracture of the eighth cervical vertebra, with a crushing bruise of the first and second dorsal segments of the cord. Columnar hæmorrhages were found extending upward and downward from the crushed segments.

In the case of perforating necrosis reported by Dr. Dana there had been no history of trauma such as would give rise to these columns as the result of a crushing wound to the cord, but he had distinctly stated that the myelitis had come on so suddenly as to give rise to suspicion of hæmorrhage, and he had concluded from the clinical history that there actually had been a hæmorrhage at first.

In conclusion, Dr. Van Gieson regarded the condition of perforating necrosis as a distinct and individual lesion of the cord, due to a definite series of changes beginning with hæmorrhage. To indicate this condition and to distinguish it from other spinal lesions, he suggested the name hæmatomyeloporus.

Dr. **Starr** said he felt no hesitancy in accepting the explanation given regarding the origin of the condition described as perforating necrosis. There was nothing in the physics of the subject which would militate against such an explanation. The connective tissue covering the cord and holding it in had a decided thickness and consistence; it offered some opposition to the knife in the fresh state, and, no matter how extensive the crushing of the cord might be, it was rather rare at an early autopsy to find the connective tissue of the cord actually ruptured. That being the case, it was easy to understand that a hæmorrhage in the cord, in taking the course described by Dr. Van Gieson, simply follows the direction of the least resistance to pressure.

Another point of interest was that in the old cases reported by the author of the paper much of the hæmorrhage had been absorbed, leaving cavities behind. Similar cavities were met with in the brain also. This fact the speaker had seen demonstrated by Meynert. In those cases cavities existed in the lenticular nucleus; they were filled with thin serous fluid, but contained no blood. In one brain there were cavities in both lenticular nuclei. It seemed, therefore, that there might be in the brain a condition homologous to that found by Dr. Van Gieson in the cord.

Dr. G. M. **Hammond** said that, while in the recent cases reported by Dr. Van Gieson the evidence of hæmorrhage had been very apparent, he wished to ask whether the lesions in the older cases had been hæmorrhagic, and what the pathological changes had been.

Dr. **Fisher** said that in traumatic cases the explanation given, that the columns of hæmorrhage were due to the fact that the blood had followed the course of least resistance, would hold good; in other cases, however, in which the patient survived perhaps for several months, the perforating columns of necrosis might be due, not to an extension of the hæmorrhage at the time of the injury, but to slight capillary hæmorrhage leading to lack of nutrition and softening.

Dr. **Van Gieson**, in reply to Dr. Hammond, stated that in the older cases he had seen no traces of hæmorrhage in the cord lesions; simply a mass of necrosis. After hæmorrhage of the brain, the blood might entirely disappear within three or four months, leaving perhaps some pigmentation behind or simply a small cavity filled with serous fluid.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of April 11, 1894.

Gout and the Teeth.—Henry Burchard, M. D., D. D. S., read a paper on this subject by invitation of the Board of Directors.

The paper as originally written had been entitled Diseases of the Teeth with which Medical Men should be Familiar. Since then the author had seen in the *Transactions of the Pennsylvania State Dental Society* an article by Dr. Brubaker which dealt at length with the question of reflex disturbances having their origin in disease of the teeth. In view of the existence of that able paper, it would be idle, he said, to attempt extensive addition.

There were two things, however, which were worthy of the respectful consideration of every physician or surgeon. By far the most common cause of trigeminal neuralgia was some disease of the teeth. This might be the exposure of supersensitive dentin, an irritation or inflammation of the tooth-pulp, any degree or type of pericementitis, and retention of fragments of the teeth after attempts at extraction. To these must be added encysted teeth or those which had such malposition that eruption was deferred or impossible.

The dentist alone was familiar with the number of cases of trifacial neuralgia, spasmodic closure of the jaws, etc., which found relief through dental ministrations.

There was too much disposition among medical men to view teeth as little more than possible signs of hereditary syphilis, and the cause of gastro-intestinal disturbance in children; beyond this the majority of physicians did not concern themselves. This did not apply to specialists in ophthalmology and rhinology; they frequently consulted with the dental practitioner for possible sources of irritation in and about the teeth.

Dr. Brubaker had quoted Galezowski to the effect "that he always examined the teeth of his patients." Certainly the most eminent men of the medical fraternity recognized what an important part the peripheral irritation arising from dental diseases played in the causation of other and more serious maladies. Every one was, of course, familiar with the work done by Dr. Miller, of Berlin, in dental bacteriology. There was another subject for consideration to which he called attention—the number and variety of pathogenic organisms which found an ideal breeding place in the human mouth. All the pyogenic cocci—those of septicæmia, of pneumonia, of actinomycosis, etc.—were among them. The longer dental disease remained uncorrected, the more flourishing the colonies of these organisms.

Another matter, simple to be sure, but one in which eminent medical men had frequently erred, was the distinction of diseases of the dental pulp and of the tooth's periosteum. The pulp of the tooth was not its tactile portion; it was rather that of special sense, the thermal; for thermal changes were about the only cause of response in the healthy pulp. The tactile function resided in the tooth's periosteum, the pericementum.

Teeth which responded to concussion or pressure had the pericementum, not the pulp, affected; in these cases the pericementum would be found dead, decomposing, or absent. *Vice versa*, those which responded to thermal change, such as a jet of cold water thrown in the cavity, had the pulp affected. In the latter case, sedatives, warm syringings, and stopping were in order; in the former, such measures would serve to increase the difficulty through retention of irritating materials; they required antiseptic washings, such as a fifteen-volume solution of hydrogen peroxide.

After marked pericemental inflammation, abscess usually supervened. All counter-irritation in these cases should be in the mouth, localized over the gum of the affected tooth. In these cases much damage was done, even at the present day, by the use of poultices.

There was a disease of the dental periosteum which had for years attracted much attention. It was known as pyorrhœa alveolaris, or better termed phagedenic pericementitis. This disease was the cause of the loss of as many teeth as dental caries, if not more. As the name implied, it was a progressive destruction of the tooth's periosteum. Erosion of the teeth was another disorder known to dentists.

The purpose of this paper was to point out the association of these disorders with the uric-acid diathesis and their striking likeness to gouty affections.

So much confusion had arisen during the discussion of papers on this subject, all due to conflicts of definition, that two would here be premised as bases to work from. They formed the reason for such opinions as were here enunciated. Stress was laid upon this matter as it was desired to point out the probability of these dental disorders being accepted as pathognomonic of the gouty disorder. Whether gout was unquestionably present or even suspected, it was confidently believed by the writer that the dental symptoms were conclusive evidence of a condition akin to or identical with the gouty; that its three stages—tooth induration, altered secretion of the glands, and degeneration of the pericementum—were expressions which received value as diagnostic signs in the order named, representing first, the stimulative; second, the irritative; and third, the inflammatory stages of the gouty diathesis.

The uric-acid condition was one arising through faulty metabolism, causing the production and retention of an excess of uric acid in the circulating fluids, followed by the changes of tissue degeneration or those arising from the presence of a constant irritant in any member of the connective-tissue group. This left open the all-important question of the exact origin of the waste product. According to all authors, heredity played the important part as a predisposing cause. The ingestion of an undue amount of nitrogenous food or the increased consumption of malt liquors or heavy wines was the exciting cause. Prominent among the attendant disorders were fermentative dyspepsia, a complexus of symptoms known as portal engorgement, cirrhosis of the kidney, and subacute or chronic inflammation, or rather irritation, in any of the fibrous structures.

Dental erosion was a progressive loss of tooth substance through a process of decalcification, a chemical solution of the calcium salts of the teeth, evidently not associated with dental caries, which the therapeutics of caries did not check. Its action was largely confined to those portions of the teeth in contact with the labial and buccal mucous membrane.

Phagedenic pericementitis was a degeneration of the retentive apparatus of the teeth which arose without mechanical violence, specific virus, or the selective action of drugs, and proceeded to its termination with or without the formation of calcic deposits and true pus (although the pus and deposits were usual associates), the process terminating with the loss of the teeth. It was unusual to preface the pathology of a disease by its clinical history, but it would be clearer in this instance if he did so. The teeth attacked were dense and hard, of the variety which resisted the causes of dental caries. Men and women were alike subject to it. As a rule the disease was evident only after the patient had attained an age of thirty or over. Although it did exist in some cases before that age, its occurrence was unusual.

There were two types of this pericementitis, depending upon the portion of membrane first attacked. The commoner, and, as some erroneously suppose, the only type, began as a marginal gingivitis. The earliest symptom was a deepening of color and a softening of the gum tissue at the neck of the tooth. The inflammatory appearance was increased, and by the time the case received attention the close attachment of the gum to the tooth at this point was lost. Pockets were thus formed in which were found concretions, and pus oozed or might be pressed from the pouches. This process continued; there was degeneration of the pericementum, an inflammatory degeneration, or a molecular necrosis; increased deposits of calcium salts were found as the denudation of the tooth's root proceeded. The attachment of these teeth lessened particle by particle, thus adding another source of destructive irritation, undue mobility. One by one they lost their retentive apparatus, the pericementum, and were extruded, cast off as foreign bodies. This ended the process; there was no tendency toward extension to the maxillary periosteum. At the utmost this might be destroyed at the edges of the alveolar process and there would be a slight amount of molecular necrosis at that point in consequence. The deposits were usually hard and scaly and strongly adherent. In contradistinction to the ordinary salivary calculi, they were found beneath the gum, not on it.

The disease either persisted or recurred despite all local therapeusis. It was for this more than for any other reason that the condition had been ascribed to a constitutional cause. As for the dental erosion, there was found in teeth of good structure a loss, particle by particle, of the enamel and after this the dentin. This was tn such situations that the ordinary solvent, lactic acid, produced by the action of micro-organisms was in the least amount. This was the essential difference between erosion and caries. The process was usually seen when one of the superior anterior teeth was attacked. Commonly a groove or grooves might be seen, caused by a loss of enamel upon the labial faces of one or more of these teeth. The amount of enamel surface (that containing the greatest amount of inorganic matter) affected was greater than that of the dentin. This was the reverse of the process of dental caries. These spaces of denudation were in such situation and of such shape as to exclude any cause except that arising from altered secretion of the mucous glands about the parts. Dr. E. C. Kirk, the editor of the *Dental Cosmos*, who had devoted much time to investigations as to this condition, had found an almost constant association of it with gout.

In most cases there was a history of heredity and acute outbreaks. If the patient had not yet been the victim of gouty disturbance he or she did become so sooner or later. This was for disease with an incipient expression in mucous structures.

Cases were recorded of teeth in which the tissues about the necks of the teeth were intact; and yet, dissociated from any of the usual causes of pericementitis, there were seen evidences of a localized inflammation of the pericementum somewhere between the apex and the neck of the tooth. The disease area had spread until there was destruction of the entire pericementum and the tooth was lost. These cases might show no evidence of the formation of true pus until near the end, when micro-organisms gained an entrance through a loss of continuity of the tissues at the neck of the tooth.

Dr. Kirk had in his possession a tooth upon which there was a destruction of the apical half of the pericementum and much of the cementum; the remainder of the membrane was intact. In this necrotic area and near the apex had been a deposit—a calculus evidently formed in the pericementum, for its attachment had been so slight that it had been lost. This had prevented chemical analysis.

The deposits taken from these teeth had been analyzed. While some gave the murexide reaction, certain others, with a clear history of gout, showed not the slightest trace, being composed of phosphate of calcium.

All local causes having been found insufficient to explain the course and phenomena of this particular disease, a constitutional disorder had been deemed a necessary condition for its existence. The persistence after removal of local causes assured us in such a position. Search had been made among general diseases for one which would produce a degeneration of articulative tissue with an accompaniment of crystalline deposits. In the practice of medicine but two such diseases were known—rheumatism and gout—including here, as close associates of gout, rheumatoid arthritis and lithæmia. The pathology of rheumatism did not explain or agree with that of phagedenic pericementitis. We were thus driven by a process of exclusion to viewing gout as the predisposing cause. The question now was, Would the pathology of gout explain every stage of the dental disease?

Gout was hereditary in a large proportion of cases; not that this or any disease, except in a few rare instances, was inherited, but heredity was regarded as an expression of the transmission of a type of tissue. That women, who were not commonly the subjects of gout, were the victims of phagedenic pericementitis was not an argument against gouty origin; for rheumatoid arthritis was the form assumed by hereditary gout in women (Da Costa).

In the individual who had such a family history there was a predisposition to the formation and non-elimination of an excess of waste material of nitrogenous origin. It was rational to conceive of this process as one of gradual growth; although decided manifestations of the morbid influence of the retention of these waste products did not assert themselves before middle life, the predisposition existed, and the disease process probably extended over a period before becoming recognized, the body at large resisting the morbific influence until the power of combating it was lost at some weak point or points, and the disease asserted itself. Its effects might be so insidious that our means of discrimination were insufficient to discover any aberration from an ordinary healthy standard. Like any other general irritating substance, it might be present in any amount; all other conditions being alike, the effects were in direct proportion to the amount. Results of the action of these pathogenic materials would be most evident in peripheral parts—namely, in situations where there was a scarcity of blood-vessels surrounded by fibrous tissue, the least vascular parts being the first to suffer. According to the degree of irritation, there might be any stage of vascular perversion, from a slight increase in the flow of blood to the stasis which preceded necrosis; in the cellular elements, any stage from the stimulation which promoted constructive metamorphosis to the paralysis resulting in coagulation necrosis.

The most important of all questions relating to this matter was the exact mode of the production of these waste products. Until it was ascertained whether this was an expression of faulty food metabolism or of an incomplete retrograde tissue metamorphosis, we were in the dark. Again, what part might be performed by the excretory organs and the oxygen carriers of the blood? We might suspect the blood-corpuscles to have a close relation, as there were splenic changes present. Apropos of this, the thyreoid gland and bone marrow should also be involved, otherwise we had grounds for the formation of further hypotheses as to the physiology of the spleen.

It was by no means clear what influence the liver had in the production of gout. One would infer from reading some of Lauder Brunton's works that he had suspected that organ to be largely at fault. It was presumed that any body—any crystalline substance—resulting from causes similar to those producing uric oxide would have analogous action. It was known that xanthin, or, as it had been called, urous oxide, did form nuclei of cystic calculi.

Inflammations of fibrous structures arising from such a source were perhaps commoner than was supposed or conceded. The presence of an irritating product, such as uric acid, even in slightly increased amount, could produce widespread disorders of a not severe type, and render inexplicably obstinate many disease processes usually amenable to treatment.

For the purpose of comparison as to the active diseases, general gouty condition, and marked phagedenic pericementitis, Ebstein's theory was the best. It was a nutritive disturbance first, leading to necrosis; and urates were deposited in the necrotic area.

For the minutiæ of the dental trouble, first, the unusually hard and dense teeth were very commonly the subjects of pulp calcification. Accepting the uric-acid diathesis to be a condition long existent, there would be for some period present in the circulatory fluids an excess of the irritating waste product, uric acid. From this there would be structural alterations in peripheral parts. Stimulation of the peripheral cells of the dental pulp was followed by an increased deposit of calcic material, necessarily lessening the amount of organic matter present. The density of the dentin increased, and its vital parts decreased. This might continue until scarcely any vestige of vital matter was left within the teeth. They became of the variety which resisted dental caries. The cirrhotic process affected the parts about the teeth; the alveolar process increased in density, and the thickness and elasticity of the pericementum decreased. In this connection it would be a matter of great interest to note the structure of the teeth in young patients who had a family history of gout.

At a period during or approaching middle life, the gouty condition being present, it would manifest itself in one of two ways, the intensity of the action depending upon the amount of irritating material present and the amount of resistance offered by different tissues. Altered secretion was regarded as a milder form of disorder than tissue change. Function, in the majority of cases, was altered before structure. The presence of waste material would cause, in peripheral glands, irritation during its elimination. There were numerous mucous glands in the labial and gingival mucous membrane. These might secrete an acid capable of acting as a decalcifying agent upon the calcium salts of the teeth; this would explain the phenomena of erosion.

Function was in correspondence with structure; teeth of this type were designed for hard, vigorous use. From their structure they were exposed to two probable sources of debility: one, that they might become through their lessening vascular supply of the nature of bodies foreign to the structures which supported them; the other, it was questionable if, in civilized life, ninety per cent. of persons gave their teeth sufficient use in view of this fact, for teeth of this description doing the amount of work their structure demanded were out of the question. More than this, gouty patients were frequently gourmands, and indulged in food requiring little mastication.

Disuse and misuse were two prominent sources of debility in any part of the organism. The vital parts of such teeth would, therefore, come to a state of atony through disuse. Their resistive power to morbific agents would be weakened. Disease attacked preferably a weak part; or rather, a weak part per mitted the existence and growth of the causes of disease. According to the evolutionists' definition of life, it was questionable whether a perfectly healthy part could become the subject of disease. These organs were therefore in fit condition for the development of a disease process through their acquired debility.

The teeth and their attachments to the alveoli formed articulations, and the pericementum was the periosteum of the tooth's root and the ligament which bound it to the bony walls inclosing it—the type of tissue for which the gouty poison seemed to have selective action.

According to Ebstein, the gouty process was essentially necrotic. This was in marked gout; but there must be every stage of vascular disturbance antedating the necrosis. According to the degree of irritation would be the effects. Every medical man had seen gouty attacks, ranging from a slight metatarso-phalangeal arthritis to the variety accompanied by excruciating pain, followed by deposits in the joint. So, with the teeth, the phagedenic pericementitis might be an inflammatory degeneration or a necrosis of the fibrous—in fact, of all the articulative tissue. The waste matter was now in amount sufficient to produce structural degeneration. An early angeiomatous change would be a swelling of the intima; this, in small vessels, would markedly impede if not check the flow of blood. The tissues were starved, and to the extent of innutrition; there would be either inflammatory degeneration or molecular necrosis.

For the deposits, preceding their formation, there was an acid reaction in the necrotic area; the blood having lessened alkalinity, through the presence of an excess of uric acid, a substance insoluble in acids met the acid tissues, and uric acid or urates were deposited. As before mentioned, the tests for uric acid did not always demonstrate that substance to be present in the dental deposits. These, as analyzed by Dr. Kirk, were frequently found to be phosphate of calcium. It was probable that a small crystal of a urate had acted as an irritating point around which the calculus had formed. The deposits at the necks of teeth, just beneath the free margin of the gum, did not resemble ordinary salivary calculus or the deposits which were found near the apices of the teeth. Their probable origin had a close connection with the secretion of the mucous glands, which lay just within the border-line of the gum. As the disease progressed these encroached more and more upon the area of necrosis, or their presence formed the continued irritation which determined the persistence of the disease.

As before stated, there were cases where there were no visible signs of pus. If the disease began at the gum margin, pus was probably always formed. The analogous phenomenon of gout was the tophic abscess. Several pathogenic cocci had been isolated, but there was absolutely no evidence that the disease had such a cause.

There was a dental disease for which local explanations as to cause did not suffice. George B. Wood, Niemeyer, Garrod, Duckworth, and Bartholow, among medical men; Marshall, Peirce, Kirk, Jack, and others, among dentists, had noted the association of the disease with gout, and in very many cases a clear history of heredity and acute outbreaks. Search had not been thorough in certain instances to determine whether or not obscure gout was present. Other cases showed decided evidence of lithæmia. After the removal of all visible sources of local irritation, the disease of the teeth either persisted or recurred after some lessening of the severity of the local symptoms.

Some of the cases recorded were as follows: The teeth of certain individuals, with or without a definite history of gout, had become susceptible to periosteal irritation, even an inflammation, and this in the absence of the usual local irritants.

The ingestion of an undue amount of nitrogenous food or heavy wines was followed by one of these attacks of pericementitis. Upon a withdrawal of these substances from the dietary, there was a disappearance of the local inflammation.

There was but one deduction from this: The disorder must be due to faulty metabolism. There was a local inflammation, due to the formation and retention of what should be waste product; and what more was gout? There were two elements —one, a faulty metabolism; the other, the organs of excretion did not perform their functions properly. So far as there was evidence, the latter seemed to be the element which determined an attack of gout.

Faulty metabolism might, and no doubt did cause the formation of incomplete oxidation products, and these excited disorders of a mild type in very many persons; but it was only when the organs of elimination had reached and passed the limit of their function that the weak parts gave way, and an explosive attack of gout resulted.

There was no reason why any member of the same group of substances might not play the irritant rôle; xanthin or urous oxides, uric acid or uric oxides; in excess they were both irritants. Pathological chemistry certainly gave but a meager account of the origin of both substances.

In about seventy-five per cent. of cases of true phagedenic pericementitis, dentists gave an unfavorable prognosis, and despite all local measures of therapeusis the results justified such an opinion.

This was in accordance with Ebstein's theory of gout, that the process was essentially necrotic. In any disease a prognosis was favorable to the extent to which the cause might be removed and the effects remedied. Both these objects were difficult or impossible of attainment thus far in the dental disease.

As for the question of therapeutics, there was a condition in which there were altered secretion, necrosis of certain connective tissues, with a consequent undue mobility of the teeth, the presence of necrotic material, and more or less of foreign bodies; also the continuance of the predisposing cause which acted as an excitant. The indications were, of course, the removal of all the causes; a cure could not be effected while any of them persisted. All dead and foreign materials were to be removed. All bacteria were to be destroyed, and their further action was to be made difficult or harmless. Faults of occlusion were to be remedied, and loose teeth so fixed by splints that rest of the loose organs was assured. Local vascular disturbance was to be controlled. This was as far as local measures could be carried, and the daily experience of dentists demonstrated it to be insufficient.

General treatment involved the correction of the secretion of glands of the parts about the teeth. This evidently could only be accomplished by a removal of the causes which gave rise to the formation of incomplete waste products.

The gastric and intestinal catarrh must be corrected. As the gastric disturbance was of the fermentative type, a lessening of the amount of carbohydrates in the dietary was quite as important as modifying the type of the nitrogenous ingesta.

Many of the cases gave evidence of the condition known as portal engorgement. Whether affection of the liver was the primary cause of the faulty metabolism or not was a question of the utmost importance. The changes in fibrous structures at large, such as in the tissue beneath the bronchial and pulmonary epithelium, and in the connective tissue of the kidney, etc., were not within the province of our special therapeutics. Certainly the general indication was the elimination of the retained, irritating waste product. How else did colchicum act?

Many symptoms were relieved by producing an increased alkalinity of the fluids of the body. In some situations concretions were removed through the solvent action of lithium salts, but it was out of the question to hope for such a result with dental deposits. The tartrate of potassium and sodium was one of the agents used for the double purpose of producing alkalinity of the circulating fluids and acting as an eliminant through the *primæ viæ*. This fact had suggested to Dr. Kirk the advantages of replacing one of the bases of this tartrate by lithium; a lithium Rochelle salt was the result. The virtues possessed by this compound over the usual lithium salts and the officinal Rochelle salts were evident. While it performed the office of the tartrate in bringing about an increased alkalinity of the blood, there was added the uric-acid solvent, lithium. It had a mildly laxative effect. Where it had been tried there had ensued a speedy amelioration of the annoying symptoms of lithæmia due to clogged excretion.

Dr. Bartholow had called attention to the value of manganese salts in the treatment of the gouty condition. They aided first in a correction of the gastric disorder, and secondly, as in the case of permanganate of potassium, increased the oxidizing function. Iron should, therefore, be doubly useful in the anæmia of the gouty diathesis. In this connection, was it not possible that certain obscure maladies relieved through the inhalation of oxygen might be cases of obscure gout, masked lithæmia?

Dr. E. C. Kirk said that as medical men and as dentists we were familiar with this question of deposits on the teeth and of the loss of teeth by such deposits, but he thought that the general public, and probably medical men, were inclined to view them all as simple tartar. Dentists recognized that there was a broad distinction to be made between the two classes of deposits—those on the crown and those on the root, or in connection with the pericemental membrane of the root. Those on the crown had, on analysis, been found to consist of calcium phosphate, with a little calcium carbonate and some organic matter. The removal of this form of deposit usually removed the irritation to the gum membrane.

On the other hand, deposits on the tooth root had been shown recently to possibly take place without any break of the attachment of the gum margin. The deposit seemed to take place in the texture of the pericementum of the root. Such deposits were, of course, irritating, and brought about an inflammatory condition running a chronic course, and ultimately, loss of the tooth took place. The association of this condition with the gouty condition, or that condition known as the uric-acid diathesis, had long been observed, but not until recently had a close connection been made out. Dr. C. M. Pierce, of this city, had some deposits from the roots of teeth carefully selected, and analyzed by Professor Congdon, of the Drexel Institute. It had been found that they contained uric acid, urates of sodium, potassium, and calcium. This discovery seemed to furnish the connecting link between this disorder and the ligamentous inflammation in other parts of the body associated with gout. On the announcement of these results, Dr. Kirk had made numerous analyses of deposits taken from the roots of teeth in gouty persons, and those in which the lithæmic condition had not been so evident. In nearly all the presence of uric acid had been demonstrated. He was not sure that it had not been present in all, for those in which he had failed to find it had been among the first cases studied, and the result might have been modified by imperfect methods of testing.

There was another point, and one which it seemed to him had not been sufficiently emphasized—viz., that where this suggestion was acted upon, and the therapeutic methods adapted to gout were instituted, marked success in the cure of this local disorder was obtained. It had long been the Gordian knot of dentistry to prevent the recurrence of this disorder, which was known as pyorrhœa alveolaris. Under these circumstances he was gratified to had heard this paper. He believed that the dentist had reached a point where his partial training was insufficient to enable him to cope with this disorder. The possible relationship had been pointed out, and if it could be demonstrated that this particular form of dental disease was pathognomonic of gout, as the speaker believed it could, it formed a most important diagnostic sign of which physicians should avail themselves.

With regard to the recognition of the oral conditions in relation to the general systemic condition, he would like to call attention to a point raised by hearing the first paper of the evening. We must admit that the mouth was the port of entry for nearly all the pathogenic organisms. It seemed to him evident that the whole course of the symptoms recorded by the essayist, their order of occurrence, and the marked tendency to relapses in influenza, showed that at its inception the disease was in the mouth. The characteristic furred tongue, the aphthous ulceration of the mucous membrane, and the infection ot the tonsils would all point to that, the infection of the gastro-intestinal tract following as a sequel to the oral infection. It had been his habit to advise proper sterilization of the mouth with appropriate antiseptics for the purpose of preventing the recurrence of influenza. Perhaps the best antiseptic was the peroxide-of-hydrogen solution. The continued use of this agent had, he thought, prevented the recurrence of the disorder in many cases. He had reason to believe that it had done so in his own case. He had suffered through two epidemics with frequent relapses of influenza, and these had ceased after rigid care in sterilizing the mouth with hydrogen peroxide.

Dr. E. T. Darby said that the essayist had alluded to two conditions which were present in the mouth, both of which had baffled dental practitioners for many years—namely, erosion and phagedenic pericementitis. Of the latter, Dr. Kirk had spoken at length. In regard to erosion of the teeth, we had from time immemorial been baffled in ascertaining the true cause. The essayist had pointed out some of the conditions present—namely, wasting of the enamel tissue, wasting of the dentinal tissue, and finally exposure of the pulp and loss of the tooth. We had not been satisfied with the theories which had been advanced, such as acid saliva, or the use of acids in the form of fruit and drinks, but we had looked for the cause in almost everything that we could think of, until finally we began to study the theory of gout, and the consensus of opinion of late had been that, in the majority of instances where we found erosion, we also found the gouty diathesis. As had been stated, in women it was frequently found associated with deposits in the smaller joints. In other cases gout was present in many forms, but almost invariably where there was erosion we found the gouty diathesis. Some had gone so far as to assert that by controlling the gouty tendency they had arrested the disease. This was one of those conditions with which the dentist could not battle alone. It was one of those conditions in which the medical man could do much to modify, if not to prevent.

The speaker presumed that most medical practitioners were familiar with this condition of the teeth to a greater or lesser extent. We had doubtless noticed that wasting of the labial surface, its loss of polish, then the deep grooves that had followed upon the labial and buccal surfaces. These had been attributed to the use of the toothbrush and powder. We might have noted its progress until there were very deep grooves extending well into the body of the tooth. This was the condition which was recognized as erosion.

(*To be concluded.*)

Book Notices.

Gonorrhœa. Being the Translation of Blennorrhœa of the Sexual Organs and its Complications. By Dr. Ernest Finger, Docent at the University of Vienna. Third Revised and Enlarged Edition. With Seven Full-page Plates in Colors and Thirty-six Wood Engravings in the Text. New York: William Wood & Company, 1894. Pp. vii–324. [Price, $3.]

The author first reviews the history of blenorrhœa of the sexual organs, dividing it into three periods: the first, in which the disease possessed its identity until the occurrence of syphilis; the second, until 1830, when it was confounded with syphilis; and the third, since 1830, in which its identity has been recognized. The consensus of recent investigations shows that the gonococcus is found in all cases of suppuration of the mucous membranes, especially of the genitalia and conjunctiva, that are described clinically as gonorrhœal; and it is absent in all non-gonorrhœal processes. Further, only pus containing gonococci produces gonorrhœa, and other micro-organisms cultivated from such pus, but not identical with the gonococcus, do not produce gonorrhœa.

He indicates how the division of the urethra by the compressor muscle into an anterior and a posterior portion is of very material importance in the pathology, symptomatology, and treatment of gonorrhœa in the male.

The statistics the author has collected show that in the greatest number of cases gonorrhœa develops on the third day, and more than two thirds within the first week, while a period of incubation longer than fourteen days is extremely rare. He considers that the development of posterior urethritis, occurring at a time when the acuteness of the process in the anterior urethra is diminishing, favors the rapid termination of the latter.

We know of no physiological fact that justifies the author's assertion that "our social conditions make extra-marital coitus necessary for a large number of young people," or the advice regarding the prophylaxis of gonorrhœa.

The author reviews the various proposed methods of treating gonorrhœa. He does not consider topical interference indicated until the blenorrhagic inflammation has passed its acme, a position that we believe is desirable and tenable, though frequently violated. He advises that the intensity of topical interference should be inversely proportionate to the acuteness of the inflammation.

Chronic urethritis, the complications of gonorrhœa in the male and in the female, and its complications occurring in both sexes are discussed *in extenso.*

The volume is well prepared, the translator's work is satisfactory, and the work will prove useful in contributing to a comprehensive knowledge of this important disease.

Lectures on the Surgical Disorders of the Urinary Organs. By Reginald Harrison, F. R. C. S. Fourth Edition, rewritten. London: J. & A. Churchill, 1893. Pp. xvi–588.

The fact that the last edition of his lectures had been out of print for some time afforded the author an opportunity to thoroughly revise them as well as to incorporate his Lettsomian Lectures of 1888 and Lectures before the Royal College of Surgeons in 1891. This has increased the size of the volume and added to the number of the illustrations.

In the lectures on urethral stricture the author countenances excision of the stricture in instances in which the lesion is due to laceration or wounds of the deep urethra. He does not consider that electrolysis is a desirable method of treatment. Gradual dilatation, he thinks, is the best treatment for the larger proportion of urethral strictures; and he is disposed to limit the performance of internal urethrotomy to cases of penile stricture and to contractions in the deep urethra in which gradual dilatation is impracticable. We note with surprise that the author finds a useful field for Holt's divulsion operation. His later experience has confirmed the favorable results he published in 1885 of combined internal urethrotomy and perineal cystotomy for recurring strictures in the penile and deep urethra, for some instances of urinary fistulæ, for extensive strictures, and for strictures that are complicated with toxic conditions of the urine.

The author describes in detail the methods of lithotomy and lithotrity, and, while conceding the usefulness of epicystotomy, he by no means considers it the sole operation for calculus.

These lectures afford an excellent and conservative guide to the treatment of the surgical disorders of the urinary organs. Full credit is given to those American surgeons whose names are necessarily associated with the progress that has been made in this branch of surgery, and the author finds many of our instruments of great value in operative work.

BOOKS, ETC., RECEIVED.

Die Causale Behandlung der Tuberculose. Experimentelle und klinische Studien. Von Edwin Klebs. Mit einer Photogravure, sieben Farben- und neunzehn Kurventafeln, vier Figuren im Text und einer statistischen Beilage. Hamburg und Leipzig: Leopold Voss, 1894. Pp. xvi–629. [Preis, M. 30.]

Leçons de thérapeutique. Par Georges Hayem, professeur de clinique médicale à la Faculté de médecine de Paris, etc. Les agents physiques et naturels. Agents thermiques. Électricité; modification de la pression atmosphérique, climats et eaux minérales. Avec 150 figures et 1 carte des eaux minérales et stations climatiques. Paris: G. Masson, 1894. Pp. viii–692. [Prix, 12 *fr.*]

Bibliothèque d'éducation spéciale 11. Rapports et mémoires sur le Sauvage de l'Aveyron, l'idiotie et la surdi-mutité. Par M. Itard avec une appréciation de ces rapports par M. Delasiauve. Préface par M. Bourneville, médecin de la section des enfants nerveux et arriérés de Bicêtre. Éloge d'Itard par M. Bousquet. Avec portrait du Sauvage. Paris: Felix Alcan, 1894. Pp. xlvii–144. [Prix, 4 *fr.*] [Publication du *Progrès médical.*]

Die Bedeutung der hypnotischen Suggestion als Heilmittel. Gutachten und Heilberichte der hervorragendsten wissenschaftlichen Vertreter des Hypnotismus der Gegenwart. Herausgegeben von Dr. Med. J. Grossmann, redacteur der *Zeitschrift für Hypnotismus* in Berlin. A. Ausgabe im Originaltext. Berlin: Bong & Co., 1894. Pp. xviii–160. [Preis, M. 2.50.]

Lehrbuch der Haut- und Geschlechtskrankheiten für Aerzte und Studirende. Von Dr. Max Joseph in Berlin. Zweiter Theil; Geschlechtskrankheiten. Mit 24 Abbildungen im Text und einer farbigen Tafel. Leipzig: Georg Thieme, 1894. Pp. viii–401.

A Serious Fallacy attending the Employment of Certain Delicate Tests for the Detection of Serum-Albumin in the Urine, especially the Trichloracetic Acid Test. By D. D. Stewart, M. D., Philadelphia. [Reprinted from the *Medical News.*]

The Interrupted High-voltage Primary or Mixed Current. By George J. Engelmann. [Reprinted from the *Medical News.*]

So-called Spontaneous Combustion, or Increased Combustibility of the Human Body, with Experiments. By Adrian Hava, M. D., New Orleans. [Reprinted from the *New Orleans Medical and Surgical Journal.*]

Hysterectomy by Morcellement and the Vaginal Route in Pelvic Operations, in Place of Laparotomy or the Abdominal Method. By George J. Engelmann, M. D., St. Louis. [Reprinted from the *Transactions of the Southern Surgical and Gynæcological Association.*]

Tumor of the Brain simulating a Vascular Lesion; to which is added an Account of the Autopsy, with Remarks. By J. T. Eskridge, M. D., Denver. [Reprinted from the *Medical News.*]

Four Cases of Opium-poisoning in which Potassium Permanganate was Administered. By Walter L. Pyle, M. D., Washington. [Reprinted from the *Medical News.*]

Brain Surgery, with a Report of Nine Cases. By F. C. Schaefer, M. D., Chicago. [Reprinted from the *Journal of the American Medical Association.*]

Tenorrhaphy by Means of the Suture à Distance of Catgut, with a Report of a Case. By Emanuel J. Senn, M. D., Chicago. [Reprinted from the *Journal of the American Medical Association.*]

The Tubercular Diathesis Controlled by Gold and Manganese in Combination. By J. Blake White, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

A Specimen of Four Healed, Ascending Ileal Invaginations, Symmetrical and Equidistant. By Ludvig Hektoen, M. D., Chicago. [Reprinted from the *International Medical Magazine.*]

Pathological Notes on Two Pedunculated Tumors. By Ludvig Hektoen, M. D. [Reprinted from the *Journal of Pathology and Bacteriology.*]

On Amblyopia from Dinitrobenzol, with Remarks on the Employment of the Substance in the making of Certain Explosives, and its Effects on those engaged in the Manufacture. By Simeon Snell, F. R. C. S. Edin. [Reprinted from the *British Medical Journal.*]

A Case of Primary Tuberculosis of the Laminæ and Spinous Processes of the Vertebral Column. By John B. Roberts, M. D., Philadelphia. [Reprinted from the *Annals of Surgery.*]

Synopsis of a Chinese Secret Manuscript on Syphilis, reprinted in Japan, A. D. 1724, originally written by Chin-Shi-Sei, who lived under the Dynasty of Ming (A. D. 1368–1644). By Albert S. Ashmead, M. D. [Reprinted from the *University Medical Magazine.*]

Surgical Shock. By Charles P. Noble, Philadelphia. [Reprinted from the *Annals of Gynæcology and Pædiatry.*]

Subvolution. A New Pterygium Operation. By Boerne Bettman, M. D., Chicago. [Reprinted from the *Journal of the American Medical Association.*]

Ripening of Immature Cataracts by Direct Trituration. By Boerne Bettman, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Rheumatic and Gouty Affections of the Eye. By William O. Moore, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

The Spectacle Treatment of Hypermetropia. By Boerne Bettman, M. D. [Reprinted from the *North American Practitioner.*]

A New Method of Examining the Kidney, especially for Stone. By Charles P. Noble, M. D. [Reprinted from the *Transactions of the Philadelphia County Medical Society.*]

Acute Puerperal Cellulitis and True Pelvic Abscess. By Charles P. Noble, M. D. [Reprinted from the *American Journal of Obstetrics and Diseases of Women and Children.*]

A New Uterine Curetting Forceps. By Charles P. Noble, M. D. [Reprinted from the *Annals of Gynæcology and Pædiatry.*]

Profuse Menstruation. By Charles P. Noble, M. D. [Reprinted from the *Annals of Gynæcology and Pædiatry.*]

Procidentia Uteri. By Charles P. Noble, M. D. (Read before the Obstetrical Society of Philadelphia, January 4, 1894.)

A Contribution to the Study of the Physiological Actions of Sparteine. By David Cerna, M. D., Galveston. [Reprinted from the *American Medico-surgical Bulletin.*]

A Post-graduate Lecture on Intracranial Tumors. By James Taylor, M. D. Edin., M. R. C. P. Lond. [Reprinted from the *Lancet.*]

On the Use of the Common Ragwort in the Treatment of Disorders of Menstruation. By William Murrell, M. D. Lond. [Reprinted from the *Medical Press and Circular.*]

Comparative Oology of North American Birds. By R. W. Shufeldt, M. D., Washington. [Reprinted from the *Report of the United States National Museum.*]

Scientific Taxidermy for Museums (based on a Study of the United States Government Collections). By R. W. Shufeldt, M. D. [Reprinted from the *Report of the United States National Museum.*]

Ueber kristallisirtes Guajakol. Von Dr. L. Wenghoffer. [Sonderabdruck aus der *Pharmaceutischen Zeitung.*]

Lo Sfregio di Villa Borghese e i Reduci dalla Galera. Pel Professor A. Zuccarelli.

Casistica medico-legale. Pel Professor A. Zuccarelli.

Rotura de la Ureta por Estrechez. Absceso Urinario y Gangrena del Escroto. Perdida de Cinco Centimetros de Uretra. Uretrotomia Interna por la Electrolisis—Curación. Por el Dr. Ramon Martin Gil. [Reprinted from the *Gaceta Médica Catalana.*]

Ueber Dulcin. Von Professor R. Kobert, in Dorpat. [Sonderabdruck aus der *Centralblatt für innere Medicin.*]

Address of Welcome to the Association of Military Surgeons. By Samuel C. Busey, M. D. Delivered at Washington, May 1, 1894.

Annual Report for 1893 of the New York Ophthalmic Hospital.

Report of the Rush Hospital for Consumption and Allied Diseases, from February 1, 1892, to February 1, 1894. With the second report of the Women's Board of the Rush Hospital.

The Seventeenth Annual Report of the Officers of the Retreat for the Insane, Hartford, Conn., April, 1894.

The Twenty-second Annual Report of the Board of Directors of the Zoological Society of Philadelphia.

Miscellany.

The Leech as a Drug.—Among the papers presented at the Eleventh International Medical Congress, according to the account published in the *Mercredi médical* for May 9th, was one on the action of extract of leeches on the formation of thrombus, by Dr. Sahli, of Berne, who remarked that Haycraft and Dickinson had already shown that extract of leeches hindered the coagulation of the blood. The active principle of this extract, it seems, is not destroyed by heat, it is not poisonous, it is insoluble in alcohol, but soluble in water, and it is eliminated in the urine, which then possesses the property characteristic of the extract. After having anæsthetized rabbits, the author divided the jugular vein and tied its proximal ends; then with the aid of the needle of a hypodermic syringe he inserted a bristle, for the purpose of giving rise to the formation of a clot. The clot was formed at the end of twenty minutes. To hinder this coagulation, it is well to make use of the cephalic extremity of a leech; one leech's head suffices to prevent about two ounces of rabbit's blood from coagulating. The time during which this procedure continues to be efficient is abbreviated if the kidneys are acting well. The harmlessness of intravenous injections of extract of leeches allows of therapeutical investigations in the human subject in cases of relapsing thrombosis and of infarction. As human blood coagulates a little less readily than that of the rabbit, the heads of from eighty to ninety leeches will answer for a man weighing one hundred and twenty pounds. It will be well to associate with the use of this medicament that of other agents operating upon the vascular apparatus, such as digitalis. In answer to a question, the author said that he had not yet experimented as to the action of extract of leeches on the heart or on the blood pressure.

Aluminum Supports in the Treatment of Pseudarthrosis.—In the *Journal des praticiens* for May 12th Dr. Thiriar, of Brussels, calls attention to the use of aluminum as a medium of fixation of the fragments in cases of ununited fracture. He first relates a case of compound comminuted fracture of the middle third of the leg in which, union having failed to take place, various operative procedures were resorted to without success. Finally, after the most careful antiseptic precautions, the author cut down upon the false joint through the tissues on the inner side of the leg and detached all the soft parts, including the periosteum, from the inner surface of the tibia. Then he refreshed the ends of the fragments and united the two portions of bone by means of a sheet of aluminum about four inches long and half an inch wide, pierced with six holes, through which six broad-headed screws, half an inch long, were driven. The plate and the screws had been disinfected most minutely after having been scrubbed with soap, with ether, and with alcohol, they were heated in the flame of a spirit lamp and immediately thrown into a five-per-cent. solution of carbolic acid. The metal was well tolerated and the patient made a good recovery. Another case related is that of a woman forty-two years old, in which the fracture was just below the knee. In this case also the treatment produced a good result. The author remarks that copper was recently proposed anew by Gluck, of Berlin, for supports of this kind, but unfortunately copper is not well borne by the tissues. In 1891 Dr. Quenu resorted to aluminum, but the author is not informed as to the character of the results he obtained. Dr. Thiriar thinks that the use of aluminum will be found advantageous not only in cases of confirmed pseudarthrosis, but also in recent cases of complicated fracture where it is difficult to maintain the fragments in good coaptation.

Heat as an Adjuvant to Iodine.—In the *Lancet* for May 12th Dr. Dawson Turner, of Edinburgh, cites Professor Tyndall's observations as to the action of iodine in shutting off the sun's light rays, while being remarkably penetrable by the heat rays, also Major Holmes's and Captain Cunningham's reports of remarkable results obtained in the treatment of goître in India by smearing the enlarged thyreoid gland with an ointment of red iodide of mercury and then causing the patient to sit for hours with his neck exposed to the rays of the sun or to a hot fire. On the strength of these data he suggests that when iodine is applied as a sorbefacient it is wrong to cover the part, but that, on the contrary, it ought to be exposed freely to the rays of the sun or to a good fire.

Trichotillomania.—It seems that this name has been given to a morbid condition characterized by a propensity to pluck out the hairs in consequence of excessive itching. At a recent meeting of the *Société de dermatologie et de syphiligraphie*, a report of which appears in the *Journal des praticiens* for May 12th, M. Hallopeau presented a paper on this subject, giving the following conclusions: There is a morbid condition characterized by severe itching of the hairy parts of the body, with paroxysms of exacerbation. These paroxysms are accompanied by a sort of mania which leads the patient to seek relief by pulling out the hairs of the affected part. Neither the hairs nor the skin show any alteration appreciable to the naked eye; under the microscope the hairs appear normal, but some of them wander beneath the epidermis. The affection is not a variety of prurigo, for the lesions characteristic of that disease are completely wanting. The trouble is of very protracted duration and is probably incurable; the treatment that seems most soothing to the patients is that of isolating the itching parts either by means of a protective varnish or by wrapping them in India rubber.

The Pope and an Amateur Physician.—The *Gazette de gynécologie* for May states that a curate named Kneipp, renowned for his cures with cold water, was lately consulted by Pope Leo XIII for certain pains attributed to his advanced age. The curate advised the application of cold compresses to the knees and to the nape of the neck. This treatment produced most unfortunate results; the Pope took cold and his knees became so swollen that he was obliged to call upon his ordinary physician. Monseignor Kneipp, says our contemporary, is no longer in the odor of sanctity at the Vatican.

The American Medical Association.—At the sessions of the Section in Surgery and Anatomy, on June 5th, 6th, 7th, and 8th, the following papers will be read: Some Surgical Sins, by Dr. John B. Roberts, of Philadelphia; The Pathology of Malignant Growths, by Dr. E. Laplace, of Philadelphia; A Critique of the Sporozoan Theory of Malignant Neoplasms from a Microtechnical Standpoint, by Dr. A. P. Ohlmacher, of Chicago; The Clinical Recognition of Malignancy in Tumors, by Dr. C. A. Wheaton, of St. Paul, and Dr. Henry W. Coe, of Portland, Oregon; The Necessity of Early Surgical Interference in Malignant Tumors, by Dr. R. A. McLean, of San Francisco; The Value of Caustics in Malignant Growths, by Dr. John Parmenter, of Buffalo, and Dr. L. Duncan Bulkley, of New York; The Radical Cure of Malignant Tumors by Operation, by Dr. J. H. Wythe, of Oakland, Cal.; The Value of Inoculations with Septic or Toxic Agents in the Treatment of Malignant Neoplasms, by Dr. John A. Wyeth, of New York; Non-malignant Stenosis of the Pylorus and Duodenum, by Dr. N. S. Scott, of Cleveland; The Early Symptoms and Diagnosis of Tubercular Joint Disease, by Dr. Emmet Rixford, of San Francisco, Dr. A. B. Judson, of New York, and Dr. A. J. Steele, of St. Louis; The Conservative Treatment of Tubercular Joints, by Dr. R. H. Sayre, of New York, Dr. Harry M. Sherman, of San Francisco, and Dr. James E. Thompson, of Galveston; The Operative Treament of Tubercular Joints, by Dr. Robert W. Lovett, of Boston; The Treatment of Tubercular Joints by Injections of Iodoform, by Dr. N. Senn, of Chicago, and Dr. Stanley Stillman, of San Francisco; The Treatment of Tubercular Joints by Injections of Corrosive Sublimate, by Dr. R. H. Plummer, of San Francisco; Common Errors in Prescribing and Applying Mechanical Apparatus, by Dr. A. E. Hoadley, of Chicago; The Causation and Prevention of Hernia, by Dr. James T. Jelks, of Hot Springs, Ark.; The Management of Reducible Hernia, by Dr. Emory Lanphear, of Kansas City, and Dr. C. M. Fenn, of San Diego, Cal.; The Treatment of Irreducible Hernia, by Dr. James B. Eagleson, of Seattle, Washington; The Treatment of Strangulated Hernia, by Dr. Joseph Ransohoff, of Cincinnati; The Radical Cure of Hernia, by Dr. W. E. B. Davis, of Birmingham, Ala., and Dr. H. O. Marcy, of Boston; The Radical Cure of Inguinal Hernia, by Dr. A. E.

Rockey, of Portland, Oregon; Concussion of the Brain, by Dr. L. C. Lane, of San Francisco; The Treatment of Fractures of the Lower End of the Humerus, by Dr. Oscar H. Allis, of Philadelphia; The Treatment of Fractures of the Lower End of the Radius, by Dr. P. T. Connor, of Cincinnati, and Dr. C. L. Bower, of Philadelphia; The Treatment of Fractures of the Neck of the Femur, by Dr. Bedford Brown, of Alexandria, Va.; The Treatment of Fractures of the Shaft of the Femur, by Dr. Llewellyn Eliot, of Washington; The Treatment of Open or Compound Fractures, by Dr. H. H. Mudd, of St. Louis, and Dr. John B. Hamilton, of Chicago; Tendon-grafting for the Deformities following Infantile Paralysis, by Dr. S. E. Milliken, of New York; The Effects of Obstruction in Urination upon the Bladder and Kidneys, by Dr. J. William White, of Philadelphia; The Diagnosis and Treatment of Enlargement of the Prostate Gland, by Dr. Hunter McGuire, of Richmond, and Dr. William T. Belfield, of Chicago; The Symptoms and Treatment of Stone in the Bladder, by Dr. William T. Briggs, of Nashville; The Symptoms and Treatment of Tumors of the Bladder, by Dr. John B. Deaver, of Philadelphia, and Dr. C. F. Buckley, of San Francisco; The Treatment of Stricture of the Urethra, by Dr. J. Rosenstirn, of San Francisco; Carcinoma of the Urethra, with a Report of Two Cases, by Dr. H. O. Walker, of Detroit; The Pathology and Symptomatology of Hæmorrhoids, Anal Fistula, and Anal Fissure, by Dr. J. M. Mathews, of Louisville, and Dr. David Powell, of Marysville, Cal.; The Treatment of Hæmorrhoids, by Dr. Charles B. Kelsey, of New York; The Treatment of Anal Fistula, by Dr. J. McF. Gaston, of Atlanta, and Dr. G. B. Somers, of San Francisco; The Treatment of Anal Fissure, by Dr. Thomas W. Huntingdon, of Sacramento, and Dr. Lewis H. Adler, Jr., of Philadelphia; A Plea for the Early and Systematic Removal of the Inguinal Lymphatic Glands in Cases of Malignant Growths in Regions from which these Glands receive Lymphatics, by Dr. H. Reineking, of Sheboygan, Wis.; Shall it be Catgut, Silk, or Both? by Dr. A. Morgan Cartledge, of San Francisco; Electrolysis in the Treatment of Aneurysm of the Aorta, by Dr. C. M. Richter, of San Francisco; Spinal Surgery, with a Report of Two Cases of Laminectomy for Paraplegia caused by Pott's Disease, by Dr. F. C. Schaefer, of Chicago; Bloodless Vaginal Myomectomy—Partial Resection of the Bladder, including the Ureteral Opening, with Reimplantation of the Ureter, by Dr. Mayer; and The Surgical Uses of Acetanilide, by Dr. George W. Woods, of the navy.

Sugar as an Oxytocic.—In the *Revue internationale de bibliographie médicale, pharmaceutique et vétérinaire* for April 25th there is a summary of an article on this subject published in the *Semaine médicale.* On the strength of observations by Dr. Mosso and Dr. Paoletti as to the action of sugar on muscular power, Dr. Bossi conceived the idea of administering it in cases of defective uterine contraction during labor. He found that it answered the purpose well and was free from the inconveniences attending the action of ergot. In eleven cases of uterine inertia during labor an ounce of sugar dissolved in water was given, and in ten of the patients it had a most favorable effect on the pains. The ecbolic action of sugar is apparent in from twenty-five to forty-five minutes, and in many cases it is sufficiently prolonged to accomplish the expulsion of the child. In some cases it has been found necessary to give a second dose of the same amount, an hour after the first one, in order to terminate the labor. The contractions excited by sugar are always perfectly regular, and never take on a tetanic character.

Vaccinal Ophthalmia.—In a recent Bonn thesis Dr. Schmitz discusses this subject, founding his study upon the case of a woman who, in consequence of carrying a vaccinated child, accidentally inoculated her eye with vaccinia. An abstract of the essay is given in the *Presse médicale* for May 5th. The woman was not examined until five weeks after the beginning of her trouble; she then presented ulceration of the cornea with iritis, but without special features. The author considers the lesions as of vaccinal origin, but the reporter, M. V. Morax, thinks that this is by no means demonstrated. The author has found in medical literature five cases of vaccinal keratitis and twenty-five cases of a vaccinal eruption on the eyelids. When the affection develops in the eye, it generally begins by a little ulceration of the lower lid, appearing four days after the inoculation. There is œdema of the eyelids, together with chemosis, which is sometimes very pronounced. The base of the ulcer is usually indurated, so as to suggest a syphilitic chancre. Then further ulcerations are developed on the margin of the lids. On watching the evolution of the ulcers, it may be noticed that they proceed from pustules which, as a rule, do not present the characteristic central depression. The patients often have certain constitutional symptoms. Then, after the lapse of from eight to ten days, recovery begins and advances very rapidly. It is uncommon to see the vaccinal eruption invade the cornea. When it does, it generally forms little ulcers bordering on the edge of the cornea. These ulcers heal without leaving scars. In five exceptional cases the lesion occupied the central portion of the cornea.

An Atypical Neurosis.—In the *Centralblatt für innere Medicin* for May 12th there is an abstract of an article by Dr. L. Bauer, published in the *Berliner klinische Wochenschrift*, giving the history of the case of a boy, thirteen years old, who had always been very irritable and for three years had been the subject of extraordinary outbursts of fury. All of a sudden he was attacked with hyperæsthesia of the right foot, which disappeared in seventeen days. Six weeks afterward the same affection seized upon the left foot, and after that there were repeated attacks affecting both feet. In two of these attacks only there was erythematous reddening of the skin of the feet. Once there was hyperæsthesia of the neck in the region of the spinal accessory nerve. Coincidently with this there arose total deafness, which lasted for thirteen months and then disappeared entirely. During the persistence of the deafness the attacks of hyperæsthesia of the feet ceased, but after its subsidence they appeared again, and at the time of the report they were accompanied by some weakness of the legs. The author is disposed to class the case as one of erythromelalgia, but the commentator, Dr. Rothmann, of Berlin, thinks it more probable that it belongs under the head of hysteria.

Gersuny's Operation for Incontinence of Urine in Women.—This operation consists in freeing the anterior portion of the mucous membrane of the urethra from the surrounding parts by an incision, twisting it more or less, and fixing it in its twisted condition by means of sutures. At a recent meeting of the *K. k. Gesellschaft der Aerzte*, of Vienna, a report of which appears in the *Wiener klinische Wochenschrift* for May 10th, Dr. Hofmokl related the case of a woman, twenty-seven years old, on whom he had performed this operation, twisting the urethra to the extent of 180°. Up to the time of the report, about a month after the operation, she had had perfect control of the urine. In the discussion Dr. von Frisch mentioned several cases in which the operation had been performed, in one of which, done by himself, the twisting had been carried to the extent of a complete turn. In this case the benefit of the operation had lasted for about six weeks. It seems from this and his further reports that the good effect of the operation is apt to be only temporary.

Lectures and Addresses.

THE NERVOUS SYSTEM IN DISEASE,

AND THE PRACTICE OF MEDICINE FROM A NEUROLOGICAL STANDPOINT.*

By C. H. HUGHES, M. D.,
ST. LOUIS.

In this age of pre-eminent progress in every department of human research and endeavor, I congratulate you on the onward march medicine has made and is yet making toward its glorious goal—the mitigation of human misery and the mastery of disease, and especially do I congratulate you on the part American medicine has taken in the scientific triumphs of the closing century over the encompassing elements and environment adverse to man's health and strength and consequent happiness and efficiency in the affairs of life. If we look back over the passing century for only a few decades, at her contributions to the welfare of man, we find she has given more than her full quota to the common fund of human happiness. She has made physical and psychical tranquillity and power, happiness and length of days, possible to man under the strain and pressure of modern progress. She has searched out and is searching out the causes which are inimical to, or promotive of, man's strength in the battle of life. She teaches him how to evade the one and to utilize the other in power of mind and body.

As our father, Hippocrates, drove the devotees of superstition from the temple of Hygeia, and taught the people that offended gods could neither bring nor propitiated gods dispel disease, and was an example of medical hygiene in his own longevity, far beyond that of any man of his time, and as that later medical devotee of Æsculapius, and as Andreas Vesalius defied the popular prejudice and ecclesiastical power of his day at the risk of his own life, to make his first human dissection (and his unfortunate untimely death the world has never ceased to deplore), so we, his professional descendants, continue to this day breaking down and ignoring the barriers of ignorance, of prejudice, and superstition that have stood or now stand in the way of man's happiness and prosperity, unlocking the secrets of Nature's *arcanum* and setting the captive mind and organism free from the inthrallment of disease and the gloom of untimely death.

Substitutive inoculations, beginning with the triumph of vaccinia, for establishing tolerance and immunity from other violent diseases, are spreading the rescuing power and glory of our noble profession, and the names of Jenner and Pasteur are now immortal. And the "great white plague," consumption, with its 165,000 annual victims in this country alone, will soon be a thing of the past, through wisely applied antisepsis.

Electroscopic explorations now penetrate the dark and otherwise hidden places of the human body, making it a glow of light to the diagnostician, while other diagnostic means—electric, physical, chemical, dynamometric, æsthesiometric, thermometric, ophthalmoscopic, larnygo-pharyngoscopic, otoscopic, microscopic, spectroscopic, oncographic, sphygmographic, auditory, percussional, and tactile diagnosis, and uranalysis—come to the aid of the modern physician in searching out disease. What would our painstaking fathers in the profession have given to have seen this day of accurate methods of determining the existence and place and boundaries and prognosis of morbid conditions? By these means, no viscus and no system of the body escapes the search-light of modern medical diagnosis.

With these aids at our command, but little, if any, of the human anatomy in health or disease is absolutely beyond the reach of our science, and scarce any part beyond some relief from the multiple resources of medical art. That *noli me tangere* of our ancestors, the abdominal cavity, is no longer a *terra incognita* to the resources of surgery, thanks to Lister, of London; McDowell, of Kentucky; Battey, of Georgia; Murphy and Senn, of Chicago; and Lane, Gross, Agnew, Frank Hamilton, and John T. Hodgen. The once-hidden recesses of the brain also are now with impunity penetrated to where our ancestors dared not go, saving lives and minds formerly doomed to destruction, thanks to Fritsch and Hitzig, of Germany; Ferrier and Horsley, of England; and Bartholow, of America, the latter having been the first physician in the world to explore and prove the truth of cerebral localization by demonstrations on the living human brain.

"The time has been that when the brains were out the man would die." But we have changed all that. With judicious neuriatic council, profound anatomical knowledge, and skillful surgery, science now penetrates to the very dwelling-place of thought and volitional motor impulses in the cerebral cortex, enabling perishing victims to be saved by the helping hand of modern neurology and cerebral surgery.

Thus does medical science move majestically onward in her benefactions, and man, her beneficiary, moves forward to his higher destiny, under her benevolent ministrations.

I could not in the time allotted to this address give even an outline of general medical progress in our day, and I presume it is more appropriate and really expected that I should make an address more in the line of my special observation. Accordingly, since general practice is advanced by light from every quarter, I ask your attention to Points in the Practice of Medicine from the Standpoint of a Neurologist.

La Gripppe a Toxic Neurosis.—I begin with that discomforting, distressing, disastrous, and often fatal malady, *la grippe*—a disease with which all of us have become painfully familiar; a malady whose insidious destructiveness has not been properly appreciated by either the public or the profession; a disease which has been laughed at and sneezed at by doctor and patient, even while death was stealthily approaching to claim the unapprehensive victim; a disease whose nervous sequences, where death has not intercepted them, have been astonishingly various and grave. I discuss chiefly the neuropathic aspects and *sequelæ* of this disease. It is, in my judgment, a toxic neurosis, in its early stage a nervous fever, its later symptoms depending on the centers specially touched by its toxine.

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* Address in Medicine, read before the American Medical Association, at San Francisco, June 6, 1894.

Notwithstanding the warnings and apprehensions early aroused in the minds of a few clinicians of keen observation, the gravity of the *grippe*, especially in its toxic neuropathic sequence, is only just beginning to be generally recognized, though many months have elapsed since Julius Althaus, Symes Thompson, and W. R. Gowers, of London; Charles K. Mills, of Philadelphia; myself, and other writers first called attention, since the appearance of the late epidemics, to this now clearly demonstrable fact. And long before these, in former epidemics, Theophilus Thompson (the father of Symes), and Graves, Blakiston, and Peacock had noted the prominence of the nervous symptoms, especially evidences of vagus implications. Its possible fatality in certain familiar forms is now, after a larger clinical experience, much more generally apprehended and dreaded by the profession, especially since the publication of the post-mortem findings of Kusskow, of St. Petersburg, in forty cases, and the fatal results in isolated instances reported in the journals from different sections of the country where epidemic influenza has prevailed.

Kusskow's post-mortems showed hæmorrhagic and pyæmic or septico-pyæmic results as the two forms, with purulent and gangrenous inflammation of lung tissues and frequent metastasis to other organs. Hæmorrhages and hæmatomas in the muscular tissue, parenchymatous bleedings and bleedings by diapedesis, pachymeningitis hæmorrhagica interna, in one case. In fifty per cent. of the cases, hyperæmia of the pia, also meningeal infiltration and suppurative meningitis and hæmorrhage into the lateral ventricle, and very frequently lobar pneumonia. The heart muscle was soft, friable, and anæmic.

Peritonitis was never discovered. The kidneys were found to be usually affected, the spleen contracted, the intestinal canal was unchanged. Calcification was found in the muscle cells similar to those found in typhoid lesions of the bowels, venous thrombosis more often than arterial, besides the often described pharyngo-laryngeal infiltration. As the hæmorrhages were invariably unilateral, the author concludes that the lesion involves the sympathetic centers.

But these fatal endings are but little more serious than some of the results of the invasion of this disease into the region of the cerebrum, middle ear, meningeal and brain inflammation and softening, and the issue of insanity.

I have known of several cases of insanity, profound melancholia, abscess of the brain, general neuritis, facial and sciatic neuralgia and fatal paralysis (one hemiplegic), but most of the vagus in this disease and its more chronic *sequelæ* are largely neural. The heart failure mentioned by Wilks, and seen perhaps by most of us to end life in influenza, is also due to involvement of the vagus center in the medulla, as in so-called *grippe* pneumonia, which accounts for the rapid fatality of lung implication in *grippe*, and this heart failure also causes emboli and their consequences. The vagus center involvement accounts for "the great and alarming prostration and cardiac weakness out of all proportion to the intensity of the fever" noted by the authorities. And those other "striking features" likewise referred to—"delirium," the great nervous manifestations, headache, pain in the back and limbs and unbearable aching and soreness like the dengue fever misery—point also to the nervous system. This, with the meningitis with which the pneumonia is associated, the neuritis and the mental disorders, disinclination to mental effort, melancholia, and insanity which follow, as well as the numerous paralyses resulting, some of which, as already noted, terminate life, point plainly to the part the nervous system plays in revealing the presence of this peculiar and rapidly traveling poison of the air, which could spread from St. Petersburg to St. Louis in the short space of a few months.* The profound depression and the feeble intermittent pulse reveal to the neurologist the pathic power of this poison in its attack upon the vital nervous centers, and the bronchitis and the pneumonia, the swelled pharyngo-laryngeal mucous membranes, the middle ear and Eustachian catarrh, coryza, intestinal catarrh, and the nephritis, even, are no antagonizing exceptions, nor does the occasional finding of pneumococci invalidate this neuropathic view. They are seldom found in the *grippe* and more often elsewhere.

The *grippe* pneumonia, which is one of its most characteristic and fatal symptoms, is such as might come from section of the vagi, and a study of the origin and many distributions and functions of these nerves—pulmonary, cardiac, etc.—gives us lucid explanation of the phenomena of the disease not otherwise so readily understood.†

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* It is a mistake, therefore, and in the light of lately recorded experience and in that of my own limited observation, to say that "in the delicate and aged alone do we see fatal results," and it is a further mistake to attribute such results, when they do occur, "only to the intensity of the fever," as one of our most gifted and brilliant authors (Osler, *Practice of Medicine*, 1892) has done. His profound clinical acumen compels him, however, to add "profound depression."

† The vagus largely governs the lungs, the heart, and the circulation in this disease, and toxic irritation and depression of the medulla and pons explain most of the symptoms of *la grippe*. Section of both vagi above the origin of the superior laryngeal nerves is followed by loss of power in the muscles of the larynx, as well as of sensibility in the larynx, trachea, bronchi, and lungs. The reflex act of coughing is abolished, the glottis does not close, food and foreign bodies, saliva and irrespirable gases, get into the respiratory passages and cause inflammation. This was shown as far back as 1740 by Valsalva and Morgagni; also by Langallois in 1812. This has been confirmed so often since that no one now disputes it. The vessels of the lungs become surcharged with blood, owing to the labored and difficult respiration and the long distention of the lungs between inspiration and expiration, serous exudation and pulmonary œdema follow, blood exudes and pus forms in the air vesicles, and a probable paralysis of the pulmonary vasomotor nervous system takes place to add to the pulmonary engorgement through the capillary system of the lungs. The pneumonia which takes place immediately after section of the vagi was found by Michaelson, according to Landois and Sterling, to be in the lower and middle lobes; the pneumonia following section of the recurrent nerves is shown more slowly in catarrhal inflammation of the upper lobes especially. Rabbits die with symptoms of pneumonia from section of the vagus. They may live for several days, if the recurrents only are cut. Dogs live longer. If the ninth, tenth, and twelfth nerves are torn out from one side in a rabbit, death also takes place from pneumonia, according to Grünhagen.

It would be interesting, but too tedious at this time, to further follow this wandering and widely connected nerve, and note its relation and that of its near-neighbor nerves, which originate in the fourth ventricle.

All that we have thus far said has just warrant in the recorded and accepted facts of neural physiology, and the careful clinician will not fail to note their significance, and much more by study of the physiology of the other nerves whose nuclei originate in the fourth ventricle, and this nerve center when touched with its peculiar toxine in its bearing on the symptomatology of *la grippe.**

Influenza greatly weakens the *vis medicatrix* of the nervous centers, permits latent tendencies and slumbering diseases to spring into active force, and leaves the patient, after the active febrile stage has passed and after what is erroneously regarded as the stage of convalescence sets in, in a state of profound neurasthenia or toxic neuratrophia, from which spring many ills. It will develop into mischievous activity a latent rheumatic gout, neuralgia, malaria, or syphilis. We may expect to combat every morbid tendency the patient is prone to before we have entirely cured him of this malady. These latent morbid aptitudes so brought into renewed activity seriously complicate *la grippe* and embarrass prognosis. These should be appropriately combated, to leave Nature as unembarrassed as may be possible, to contend with the devastating foe. And because of the gravity of the nerve prostration and of the nervous *sequelæ,* the patient should be put to bed and kept there till the fever storm is over, and in the house much longer, in order to conserve the fighting energy of the assaulted nerve centers.

This injunction should be as imperative in many cases of *grippe* as it should be in cholera, for influenza is a far graver malady in its immediate and especially remote effects on the nervous system than it at first sight appears.

Dyspepsia as a Brain Disease.—What is true of the neural relations of *grippe* is largely true of those of dyspepsia, a disease which, as Amariah Brigham, an American physician, was the first to show, about 1840, usually has its origin in the brain, as I have elsewhere attempted, more elaborately than I shall do at this time, to establish.

I shall only ask you here to consider it as a possible brain affection from what we know of its causes, those in whom it usually exists, and the conditions of mind, occupation, and environment of those in whom we find it most often manifest.

Dyspepsia belongs to the brain-working, brain worrying, and nerve-tone-exhausting class; to those who bother their brains and eat little or not overmuch, rather than to those who gormandize; to thŏse who burn the midnight oil in study, do not sleep from fret and worry and from carking care, rather than to the *bon-vivant* high liver, and he who tarries long at the wine. It belongs to the men of affairs and women of care, to the infelicitous and the disappointed in hope and ambition, those whose cerebro-spinal systems are inordinately strained and inadequately repaired in life's battle, so that their lower corporeal functions suffer from defective innervation of the viscera concerned in the maintenance of organic life and whose cerebro-spinal systems consequently reciprocally suffer from defective appropriating power and inadequate nutrition; but starvation alone seldom develops dyspepsia.

It is through the neural connections of the brain and stomach that the acknowledged apepsia nervosa of neurology is a clinical fact. It is thus also that the relationship of nausea to migrane as the concomitant of the latter, but so long considered the cause, is explained, and, conversely, that we understǎnd *vertigo e stomacho læso,* as first described and explained by that great master in medicine, Trousseau.

In birds the upper larynx remains closed firmly and death does not take place for eight or ten days, and then with symptoms of inanition and fatty degeneration of the heart. The heart shows cloudy swelling and waxlike degeneration. Frogs die of asphyxia under the same circumstances. Some fibers of the vagus seem to exert a trophic influence over the lungs and heart.

Unilateral section of the vagus in rabbits is followed within forty-eight hours by the appearance of yellowish-white spots in the myocardium, especially near the interventricular sæptum; on the papillary muscles and along the furrows of the coronary arteries. The muscular fibers exhibit retrogressive changes whereby their striæ disappear; they become swollen and filled with albuminous granules. After eight or ten days the interstitial tissue of these foci becomes infiltrated with small round granular cells, especially near the blood-vessels. At a later stage the interstitial connective tissue increases in amount and the muscle atrophies. No effect is produced by section of the depressor or sympathetic fibers, and Fantino thus concludes that some of the fibers of the vagus exert a trophic influence on the myocardium. The same fact is not so nearly demonstrable in regard to the lungs, but it is equally inferable.

The pulmonary branches of the vagus supply motor and sensory (cough-exciting) branches to the whole bronchial system of the lungs (the pulmonary vessels being supplied with vasomotor nerves) from the sympathetic system.

They send afferent fibers to diminish, under stimulation, the activity of vasomotor centers, and thus cause a fall of the blood pressure during forced expiration, and similar fibers to act on the inhibitory centers of the heart, and thus accelerate the heart's contractions. Simultaneous stimulation of these two sets of fibers alters the pulmonary rhythm.

The vagi also contain afferent fibers which go from the pulmonary parenchyma to the medulla, which are continually in action, stimulating the respiratory center. Consequently, section of the vagi deepens the respirations and diminishes their frequency. Stimulation of the central end of the vagus also accelerates the respirations. Labored and difficult respiration may occur either when these fibers, which excite the respiratory center reflexly, are cut off, or acting centripetally to afferent impulses proceeding upward in the vagus. Conditions determining pneumonia may therefore exist in the nervous mechanism of the lungs and in its points of origin in the cord and superimposed medulla oblongata. If the trunk of one vagus or its center is paralyzed, respirations are labored, deep, and slow, such as follow section of both. Stimulation of the cardiac branches of the vagus may cause temporary suspension of the cardiac contractions, a feeling of great depression and of impending dissolution, such as we see sometimes in *grippe,* and as we see in dyspeptic asthma and the abdominal frog-tapping experiment of Goltz.

* The therapeutic lesson of the neuropathic implications of influenza is rest and reconstruction (pending the search after its causative bacteria and their proper bactericide), rest and reconstruction, that phagocytosis may be promoted in the blood, chloral as the best antiseptic, hypnotic, and calmative, for even the delirious stage. In the latter, ammonii bromidum added. For the pain, the coal-tar derivative analgesics, and sweat-producing opiate combinations, the elimination of all disturbers and depressors of nerve centers entering through the blood, like the rheumatic and malarial or venereal poison.

The brain influences the stomach and the stomach influences the brain, but the power of the former over the latter is far greater than the latter over the former in chronic conditions.*

To concede this influence of the nervous system over the digestive processes, we need not ignore any fact of chemico-biological research, nor shut out any of the light thrown on the subject by the distinguished American investigator, Beaumont, and those who have followed him in elucidating the functions of the stomach. On the contrary, Beaumont's investigations proved the power of the mental state over the digestive processes of Alexis St. Martin.

The liver, the kidneys, the bladder, and the bowels are similarly influenced by emotion, and the lymphatic system is likewise under nervous control, like the arterioles, by the vasomotors.

A center in the medulla also influences through the chorda tympani nerve, and probably the sympathetic, the salivary secretion. A center there also influences the action of the kidneys. The chorda tympani contains secretory and vaso-dilator fibers, the sympathetic, vaso secretory and vaso-dilator. Salivary secretion is induced reflexly by mastication and the irritation of the presence of food in the mouth and stomach, and by the vivid remembrance of certain foods whose eating has made an agreeable impression, and by emotion.

We swallow, we digest, we sob, and vomit by means of vagus fibers, and its fibers go to the cœliac plexus, the spleen, the liver, the kidneys, and the small intestine. Œsophagismus, gastrodynia, or cardialgia, tachycardia, palpitation and angina pectoris and spleen, intestinal liver and kidneys, are influenced by this wonderful nerve, as well as asthma and exophthalmic goître and many affections of the larynx and lower air-passages, notwithstanding the complete pathology of this wonderful nerve, and of many of the interesting diseases connected with it, may be said to be yet somewhat obscure.

The vagus and the vasomotors influence or govern circulation, respiration, and digestion.†

The dominion of the nervous system over the spleen is also evident. This fact is one of the concessions of the physiology of our day. Stimulation of the medulla leads to contraction of this organ. Not only its arteries, but the organ as a whole is maintained in a state of tonic contraction to a certain extent through the agency of the nervous system.*

Hysteria.—No better or more familiar illustration of the possible potential relation of the nervous system to disease need be mentioned before a body of practical clinicians than that of hysteria and its neural peculiarities and associated functional disturbance of organs (that mimic of all diseases with its protean features in so many instances), its atrophies, paralyses, contractures, alternating anæsthesias, hyperæsthesias and paræsthesias, aphasias, aphonias, dysphagias, stigmata, emeses, suppressions, excesses, and perversions of excretions, nutritional, sensory, motor, psychical, visual, tactile, auditory, and emotional derangements.

Hysteria illustrates in an especially forcible manner, from the standpoint of clinical observation, how suddenly and how extensively nearly all the organs of the body may be profoundly disordered in function by morbid impression through the nervous system, and these pathological impressions, often repeated and prolonged, do sometimes develop actual and enduring organic diseases.

There is a suggestive practical lesson in this "neuromimesis" or mimic neurosis, as to the relation of the nervous system to diseases in general. As the study of this disease led Goodell to discern and portray the nerve counterfeits of uterine disease and to say, "The crying error of the day is the mistaking of nerve disease for womb disease," so I say of disease in general, the crying error of the day is the ignoring of neuropathic implications, concomitants, and sequences of organic, visceral, and general diseases, and the mistaking of nervous for other diseases.

As any organ of the body may fail functionally and be perverted in the performance of its functions, so may we have organic derangements from frequent repetitions of functional disorder, if the trophic and vasomotor nerve centers share in the functional disturbance.

The Trophoneuroses.—Here we enter the clinical domain of the tropho and vasomotor neuroses, whose name is legion from symmetrical gangrene and local asphyxias of Raynaud's disease, to the ecchymoses, etc., pigment hypertrophies, cornifications, nævi, pigment atrophies (lepra, vitiligo, etc.), arthritic atrophies, climacteric and menstrual cutaneous swellings, etc., urticaria, angeioneurotic œdema, the night palsy of Ormerod, secretion anomalies like seborrhœa, hyperidrosis, anidrosis and the occasional vasomotor disturbances of the fevers, as in typhoid, and of dropsy and anasarca.*

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* Great brain and nerve strain, as in insanity, brittles the bones; grief and fright blanch the hair and face; fear paralyzes the heart, depresses temperature, causes excessive and clammy perspiration; anxiety arrests secretions and shrivels the skin; remorse wastes away the body; anger flushes the face, and so fills the brain with blood that its vessels burst and the victim falls with apoplexy; shame flushes the cheek, slows the heart and respirations; sorrow shows itself in tears; love and good fortune brighten the countenance and quicken the step and pulse, lift up the form, while adversity and remorse sadden the face, slow the pulse, bend the form, and depress the bodily movements. These things and many needless to mention show us the potency of mental influence, through its proper neural channels, on the movements of the organism. We can not deny them in regard to the stomach. On the contrary, as we see the systole of the heart arrested by emotion, so we see digestion stayed by disagreeable and depressing thought. Mental force, through psycho-neural media, pervades the body, and the stomach is not exempt from its invigorating or depressing influence over its physiological functions.

† This is just such an observation as should come more frequently from general practitioners. The vasomotor nervous system is omnipresent in its organism. It follows the vascular system to the innermost recesses of the body, and the number of its morbific functional possibilities is beyond computation. Some of the vasomotor ataxias, quite familiar to practicing neurologists who have opportunity for general medical observation, have been noticed and given a clinical grouping, under the term vasomotor ataxia, by S. Solis-Cohen.—*Vide American Journal of the Medical Sciences.*

* Physiologists now maintain that its metabolism is controlled directly by the nervous system, and they are far nearer than formerly to an understanding of its function, just as the same system is concerned in the bilious and glycogenic functions of the liver as we see demonstrated in the fourth ventricle puncture proof of artificial glycosuria, and exsection of the pancreas has resulted in glycosuria influencing the nervous system as profoundly as thyreoidectomy. The spleen may be diminished in size either generally by the stimulation of one of the afferent nerves, and locally by direct application of the electrodes to the surface of the organ. And Paul Gibier has produced glycosuria by psychical excitation of animals.—*Vide Trans. of the N. Y. Acad. of Med.*, 1893.

About all the changes which come under our eye in the skin and muscles are due to impressions made through the trophic and vasomotor nerves, influencing the circulation and growth, among which we may instance scleroderma, myxœdema or cachexie pachydermique and the myopathies, pseudo hypertrophy, and progressive muscular atrophy.

Physiological Rhythm, etc.—The nervous system regulates the law of rhythm in the animal economy in both its physiological movements and pathological perversions of movement, and this fact affords us, from a neurological standpoint, important hints for the management of our patients and therapeutic suggestions, hints often overlooked in practice.†

The nervous system is almost an omnipresent system of the human organism. The more we learn of it the more do we wonder at man's wondrous mechanism. The more we see of its relations to organism the more we discern of its omnipotence and of its subserviency in the workings of the human economy. It excites, it controls, it reveals, and is revealed and influenced by disease. The sensory nerve trunks and branches can be traced as clearly by neuralgia (sciatic, intercostal, trifacial, etc.), and by neuritis, as by the anatomist's scalpel; and the various paralyses reveal the channels of motor conduction and centers of origin of motor impulse, thus affording us means of diagnosis beyond the reach of our unaided vision. Thus cerebral localization has been confirmed as a fact of neurophysiology, as well as by electro-vivisection.

In the interrogation of morbid symptomatology, convulsive disturbances, tremors, subsultus, paralysis, circulatory changes, the periodicity of intermittency and remittency, temperature changes, delirium and other phenomena of the fevers, the collapse, spasm, and rice-water discharges of cholera, and even of the remote causation of cancer and of many of the dermatoses, we can not help but see how intimately associated the nervous system is with the movements of the organism under the influence of disease. These phenomena may truly, in a manner, be called nervous. Certain it is that the nervous system in disease plays no insignificant part—often the most important; and to timely tranquillize and reconstruct it against the assault of the causes of disease in the organism is no small part, if not the chief part, of the physician's work, for, though the blood carry germs of deadly disease to vital nerve centers, to conserve these centers by suitable therapeutic re-enforcement against their destructive work means victory over impending dissolution.

The *vis medicatrix naturæ* resides in these nerve centers, and in their power to maintain, under stress of invading disease, the normal metabolism in the various organs, and as I believe, though this is not yet susceptible of scientific proof, of the furnishing and multiplying of the phagocytic hosts of conservative destruction in the healthy blood. If the blood is the life, the nervous system is likewise the life of the organism. In this dual government of the economy in health and disease, both

Are parts of one great whole,
Whose life the blood is,
And the nerves the soul,

if this liberty of paraphrase before employed by me may be here again permitted. If we realize this fact in our clinical conclusions and efforts at treatment, we make better practitioners at the bedside than if we seek to explain the phenomena of disease by a single factor like modern humoralism, or solidism, or visceralism, or the germ theory, absolute and unconditional. It requires something more than a morbific germ to develop disease. The other factor is an assaulted, yielding and morbidly responding organism, and back of that are the disturbed or resisting mechanisms of neural control, central or peripheral, which resist, cast out, or succumb to disease.*

The Importance of Early recognizing Neurasthenia.—A great advance was made in clinical medicine when neurasthenia, or, as I have called it, general functional neuratrophia, was first recognized and differentiated from secondary exhaustion of the general nervous system, from the auto-toxicity of retained excretions and profound physiological brain and nerve and muscle tire. This condition, described by Van Deusen, an American physician, in 1877, followed by Beard, another American physician, in 1878, is one in which the nervous system appears to suffer in its nutrition, normal stability, and power, involving the viscera and nervous system only in a functional and secondary manner.

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* The term trophic disorder of muscles and organs is at present much more restricted than it manifestly will be when physiology shall have more accurately numbered and located the trophic centers, whose influence over the tone and quality of the tissues and organs is now no longer a question. Certain nerve centers and nerve fibers do undoubtedly influence the growth and repair and atrophy or decay of the tissues, and Romberg, in this discovery, has rendered medical science in its practical aspects a priceless service.

† It suggests, for instance, that we should interrogate our patients as to the normal rhythmical time for eating, defecating, and sleeping, in the administration of food, of laxatives and hypnotics, and suggest also the best part of the day for necessary disturbance of our patient with medical ministrations, ablutions, driving, exercising, etc. All habit, physiological or pathological, is bound up in the law of rhythm, and a nervous system is essential to this phenomena.

* Certain phenomena of reflex, in clinical and surgical therapy too, are better appreciated by him who thoroughly considers the nervous system in his practice. Such an one usually recognizes two factors in the peripheral causation and the morbidly responding center, which betrays in an extraordinary manner the existence of the irritation, peripheral or central.

Benjamin Rush notes the fact that Leo X died of joy upon hearing that a great calamity had befallen the French nation, and the doorkeeper of Congress died from the same cause, inducing the cerebral apoplexy upon learning of the capture of Lord Cornwallis and his army during the Revolutionary War, and the great Harvey, who discovered the circulation, died in a fit of anger. It is because impressions upon the nervous system have the power to kill that they may also engender and cure disease. This malevolent potency makes psychotherapy a benevolent possibility in practice, and no wise physician ignores it.

Neurasthenia, or general functional neuratrophia, shows itself chiefly in the brain, and is psychically characterized by timidity of conduct, nervous irritability, and morbid fears, bordering on but not becoming delusions, and physically by functional atonicity of the viscera, especially of the stomach, heart, bowels, and motor and psychical areas of the brain. It is the cause and source of apepsia nervosa and of cerebro-spinal irritation, and differs from hysteria, with which it is sometimes mistakenly confounded, in being continuous and not paroxysmal and in being far more common in men than in women.

It is a conservative neurosis like migraine, saving its victims from profounder breakdown, because the individual will endure but so much and can not stand a longer strain without a period of rest and repair, whereas if he could endure more the issue would be apoplexy, paralysis, or other organic trouble. Before its recognition it was thought necessary that some organ or system (the sanguineous, hepatic, etc.) should be profoundly affected to justify a conclusion of disease, and great injustice was done its victims under designation of hypochondriasis, hysteria, simple nervousness, etc., not requiring medication. Neurasthenia is a nineteenth-century evolution in clinical medicine.*

The Relations of Neural Overstrain to the Development of Cancer and Consumption.—The developmental relations of cancer to neural overstrain, worry, and decadence of the brain and allied nervous system have lately received renewed consideration since the writer first called attention to this singular fact in the cases of General Grant, Napoleon Bonaparte, Thomas H. Benton, and others. I believe, as I many years ago stated, that a breakdown in the central nervous system, by which its trophic and resisting powers are greatly lessened, makes possible and precedes all cases of cancer. But for this, cancer germs, if such exist, would be innocuous. The same fact is in a manner true in regard to the receptivity of phthisis and other diseases of bacillic or bacteric origin. Seeds, to germinate, must have receptive soil; and in relation to cancer, as Sims Woodhead, who believes in its parasitic causation, declares, the germs require a lowered condition of the vitality of the epithelial elements in which they make their habitat, as conditions of their growth and development. Finding a soil, they multiply, secrete their toxines, and, by their irritant action on the parts which they invade, resemble certain well-known pathogenic microbes, especially Koch's bacillus, in the degenerative processes and products which they entail.†

(*To be concluded.*)

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* Dr. George M. Beard forced the general recognition of this functional morbid state of the nervous system by the profession, though some physicians of eminence yet dispute it.

† But the question of the parasitic origin of this disease was left *sub judice* at the last International Congress at Rome, at the close of the most interesting and learned discussion ever held upon the subject. Pio-Foa, the referee's, advocacy of the parasiticism of cancer was ably contested by Cuzin, Duply, and Cornil. Pio-Foa, supported by Morpurgo, of Turin, maintained that these parasites were encapsulated protoplasmic bodies within or without the nucleus of the cancer cell, as in the descriptions of Clarke, Sondakeritch, Walker, and others, resembling the spores of protozoa or malarial hæmatozoa, and were common to all cancers of glandular degeneration.

The peripheral neoplasms contain small parasites, the deeper, large sporocysts. Mitosis or caryocinesis is absent or scarcely perceptible where the parasites are absent or few. Dr. Shattuck (editor of the *Boston Medical and Surgical Journal*, the first journal to report these facts from the Eleventh International Congress), in commenting on this latter fact, says: "This shows that they (the parasites) live, but in tissues whose vitality is low."

In this memorable discussion the following facts were opposed by Professor Cornil and others to the statements of Pio-Foa and his adherents. Cancer exists in many modified cell formations and has many nuclei resembling parasites. He asserts that Pio-Foa's parasites are metamorphosed nuclei resulting from morbid caryocinesis; that

There are found also in cancer degenerated cells whose protoplasm stains red, and which contain in place of nuclei granules, filaments or masses of nuclein, representing the different forms of indirect division, without the occurrence of achromatic filaments or of clear space around the divided nuclein. These are cell degenerations arrested in one of the phases of indirect division of the nuclei. Cornil remarked that even migrating leucocytes interposed between cancer cells had been mistaken for parasites, especially when they had retrograded and had broken up into fragments of nuclein.—*Boston Medical and Surgical Journal.*

And a yet stronger criticism of the parasitic origin of cancer is the failure of inoculation experiments to generally produce cancerous reaction, as Dr. Shattuck observes.

But even successful inoculations only bring us back to that other well-attested fact—the necessity of an adaptable soil and the absence of organic resistance—which we have placed in the neural regulation and normal inhibitions of vital cerebro-spinal centers.

Original Communications.

THE EXTERMINATION OF INFECTIOUS DISEASES.*

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Many of the infectious diseases have already been exterminated or have died a natural death.

Others are only held in check, but the time of their disappearance is probably not far away. I should place among these cholera, small-pox, and typhus fever.

The extermination of others has been but just begun. Typhoid fever and tuberculosis are on this list.

Still others are yet laying waste the land, and the way of their extinction has not yet been clearly shown. Scarlet fever and diphtheria are the worst of these, and it is to ask if we may not at least hope that these too will some time follow in the footsteps of the others that I have chosen to bring this subject before you in my paper.

These two diseases are now endemic over a great part of the world, and the task of getting rid of them does look mighty indeed. But that it can be done and will be done in time I have no doubt. They should at least be driven back to some isolated quarter of the globe, as we hope that cholera will be driven back upon India by the advance of sanitary civilization, there to be another penalty of sloth, ignorance, carelessness, and fanaticism.

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* Read before the Hospital Graduates' Club, March 29, 1894.

In a general way we know how *all* infectious diseases might be exterminated. For example, if we could take every case of a certain one of them and keep it from every direct or indirect infectious communication with another individual susceptible to it until it became no longer infectious, and then could disinfect absolutely after it, we should then and there extinguish that disease. To do this would be easier in some of the infectious diseases than in others. In typhoid fever, cholera, and tuberculosis, for example, we have only to guard our citadel from attack at one or, at most, two gates. Thus it has been said that if every person would boil his milk and drinking water before taking it, typhoid fever would end with the cases then in existence.

The same might be said perhaps of cholera.

If also we could disinfect all tubercular sputum, how long before tuberculosis would be a curiosity?

In the case of small-pox, if everybody were vaccinated and revaccinated carefully at regular intervals, this vile disease, too, would soon cease to exist.

But for the unabated continuance of those other infectious diseases, scarlet fever and diphtheria, there are many reasons.

Foremost among these reasons is the probability that their infectious principles are more viable—are more resistant to unfavorable environment—than are those of many of the other infections. The germ which caused the plague, for instance, has become practically extinct, probably because it requires for its growth such excessive conditions of filth and bad hygiene and great depression of the resistant powers of the individual from famine and privation as now no longer exist.

The germ of typhus fever also undoubtedly thrives best under similar conditions. So that our improved sanitary life and our methods of isolation and disinfection are sufficient to keep it in check. But these influences have not yet become strong enough to prove too much for the viability of the poisons of diphtheria and scarlet fever.

It may not be out of place to consider here for a moment the nature of the infectious principles of these diseases. If we look first at diphtheria in the light of our latest knowledge, we find that it is caused by a specific bacillus; that this bacillus is present only in the infected mucous membrane and in the discharges from it; that actual contact of this bacillus with the unhealthy or broken mucous membrane of a susceptible individual is necessary to infection; and that if the discharges are disinfected infection of others can not occur.

In regard to the insusceptibility of healthy mucous membrane, Dr. Jacobi says that "healthy unbroken mucous membrane will resist the invasion of diphtheria"; and Dr. Thorne says, "I have a strong impression that diphtheria never attacks a healthy throat."

In regard to safety obtained by disinfection of discharges, Dr. Welch says, "there is no evidence that the breath itself is infectious"; McCullom says that "actual contact with the patient or with the discharges from the mouth and nose is necessary in order to contract diphtheria"; and Mason says that "of twenty-three doubtful cases admitted to the diphtheria ward, although isolation was only limited, not one of the number contracted diphtheria."

Would it not be possible to question if scarlet fever also is not transmissible only in the same way, by the excretions and by the added agency of the exfoliating epidermis? Is there evidence to show that in this disease the breath, by itself, is infectious? If it is not so, then the air of a room containing a scarlet-fever patient would only be dangerous from the likelihood of its containing in its dust bacilli from material, dried and comminuted, which had been coughed up, or otherwise scattered about, or from flying epidermal scales. And if we could disinfect all these excretions and prevent the dissemination of the epidermal scales, could we not also prevent the transmission of the disease?

May I venture to suggest that the longer exposure to typhus fever, usually necessary for its transmission, may be due to the fact that in this disease there is no especial discharge from the mucous membranes and no desquamation of the epidermis to carry the infection? If we assume that expired air alone can not carry infection, it must probably come, in this disease, from the ordinary secretions of the mucous membranes accidentally disseminated, and perhaps from the discharges from the bowels.

In measles a contrary condition—that is, an increased secretion from the mucous membranes, freely scattered by coughing and sneezing—may account for its greater contagiousness.

A similar course of reasoning would explain the statement that whooping-cough is only contagious during a paroxysm.

My object in making these speculations is to show that, if the breath by itself alone can not carry infection, our mind makes of infection a much more material and seizable conception. It is no longer that of a deadly and noxious gas or vapor rising from the patient's breath, but that of a diffusion of small but material particles mingled with the dust, which diffusion and mingling we should be able to entirely prevent. It ought to do away with the feeling of powerlessness against an impalpable essence of infection exhaling from the infectious patient. Infection should be considered something that we can and must catch and kill.

If you have ever watched a person speaking, standing in a ray of sunlight such as shows us so plainly the particles of dust in the air of a room, you must have noticed the very fine particles of saliva that are constantly thrown out by the moving lips and tongue. You can not fail to have noticed the abundant spray from a cough or sneeze. Nothing of this occurs during breathing alone. We can readily understand, therefore, how in this way a talking, singing, coughing, or sneezing person might scatter infection, who would not do so when simply quietly breathing.

A lesson to be learned from this would be to keep an infectious patient as much as possible from talking, and to hold a cloth before the nose and mouth during coughing and sneezing.

But to resume the consideration of the reasons for the perpetuation of scarlet fever and diphtheria, let me take up the one which I consider as perhaps the most active and important of all—namely, that these are diseases of childhood particularly, and therefore circumstances are especially favorable to their spread from mild and unrecognized cases in schools. Thus Cummings shows that in Boston, during five years, in vacation time, there was a marked decrease in the number of cases of diphtheria—a circumstance we may perhaps have usually attributed to the influence of season alone. The confined air of most schoolrooms, the use of cloth-covered books, infected clothing, unwashed drinking cups, the licking of slates, the transfer from child to child, often from mouth to mouth, of toys and other articles, and the child's natural dislike of cleanliness, all help to make schools the chief, perhaps, of the causes of infectious perpetuations.

Schoolrooms in which infectious diseases have occurred may even themselves become a continuous source of infection; as, for example, in a reported case where, in a certain schoolroom, case after case of scarlet fever arose at intervals for a long time, culminating in a severe epidemic following the opening of the room after the floor had been torn up and its infectious dust scattered about.

Dr. Thorne Thorne, in a very recent lecture before the London Sanitary Institute, shows that the mortality from diphtheria in London during the past twenty years has nearly trebled, in spite of enormous advances in sanitation. He attributes this, in part, at any rate, to compulsory education bringing children together in schools, and he cites many very interesting examples of the influence of schools on the incidence of diphtheria.

A belief in the spontaneous origin of diphtheria from bad drainage and other unsanitary conditions has probably had a deterring influence on efforts to exterminate it. This is a belief which I think we can no longer hold. Dr. William H. Welch kindly writes me in answer to my inquiry that "the evidence is altogether in favor of the view that bad hygienic conditions alone can not cause diphtheria."

Dr. Park also writes, in answer to a similar inquiry: "All the evidence that we obtain tends more and more to make us believe that every case of diphtheria has come in a direct, or perhaps very indirect, way from another case."

Dr. Thorne says that there is no direct connection between bad sewerage and diphtheria.

Dr. Thorne, however, makes the following striking statements: "That all forms of sore throat are apparently infectious, and that there is sometimes seen during prevalence of sore throats, as the disorder passes from person to person, a progressive infectiousness, finally resulting in an outbreak of diphtheria." I understand this to mean that, by successive cultivations in the human throat, an infectious principle, causing at first only clinical forms of sore throat, may end by causing clinically true diphtheria.

Such an occurrence needs bacteriological study, but is quite inexplicable, it would seem, if we suppose late accidental infection with the specific bacillus.

He also thinks that diphtheria has not yet become a stable disease, like scarlet fever and measles, and that we ought to take speedy measures to prevent its becoming so.

Lastly, it may be said that we have no proof that specific diphtheria exists in cats or other animals except as a result of inoculation. One can suppose that cats could be inoculated accidentally from a human case and carry infection in that way or by particles of expectoration or dust in their fur. But we have no evidence to show that cats or other animals need be feared as sources of infection in any other way.

The diphtheria of pigeons and fowls is not caused by the Klebs-Loeffler bacillus. Klein's assertion that the milk of cows which have been inoculated with diphtheria may contain the *Bacillus diphtheriæ* has failed to be verified by experiments which others have made.

I must here again refer to Dr. Thorne's most recent statement, which is somewhat at variance with those given above.

He traces many apparently obscure outbreaks of diphtheria to infected milk, giving as the most frequent cause of this the existence of a disease in the cow itself; which disease is characterized by a rise of temperature and by the formation of vesicles and pustules upon the udder.

He also thinks that a large number, if not indeed the great majority, of our specific diseases come to us through the lower animals, or have come from them in the past.

Want of time prevents further reference at this point to the many other causes which influence the spread of scarlet fever and diphtheria.

We come now to consider the means we must use in our fight against those infectious diseases.

Our efforts must be directed to the repression of the great causes of their continuance, and it seems to me that the first essential for the successful accomplishment of such a work is thorough organization. As a means for such organization there might be suggested the formation of a society; a society for the prevention or extermination of infectious diseases, or simply a health society, if you choose, whose chief aim should be what is expressed in the longer title.

I am of the opinion that much good could be done by such an organization.

Even if we come to have a national bureau of public health, the work of a society would still be valuable as an aid to its work, and until we do have an efficient national bureau I see no method of widely organizing sanitary work, except by the aid of a powerful society.

It is implied, if not stated, that in the carrying out of the measures presently to be mentioned the aid of such a society would be of the utmost value.

One of the first works to be undertaken and one of the great essentials in this, as in all matters in which the whole public is concerned, is the education of the public—education by the reiterated statement in every possible way of the facts that we know about the infectious diseases. I think we neglect the public too much in the matter of its medical education, and leave it to be the victim of those mercenary gentlemen whose quasi-scientific statements fill so many columns of our newspapers.

The education of the public should begin, for example, by the printing and distributing to every family in the city, in the State, in the country, of circulars telling the things that should be known about scarlet fever and diphtheria; that they are preventable diseases, because every case comes from one before it; that everybody who has to do with a case is responsible that through him no other case arise; and that, by continual watchfulness and faithfulness, every one may help to the great end of extermination; emphasizing the vast importance of schools in spreading infection, the great need for care before allowing the return to school of children who have had infectious diseases, or even sore throats, or any other illness not absolutely known to be not contagious, and the increased susceptibility of persons with disordered mouths and throats.

These circulars could be sent out yearly or oftener, repeating the same things, reporting discoveries of importance, new methods, and the work done during the year.

Lectures on these subjects could be furnished for schools and societies and other educational or popular institutions.

Such education could very properly be made part of the regular course in schools and colleges, and teachers themselves should be well instructed in these principles. Perhaps it is from the universal and systematic education of teachers, and through them of children, that we have most to hope in the future. We have something to hope, too, from the improving standard of education of medical men and sanitary officers.

Judicious publications could be systematically made in the newspapers and periodicals, and even a special popular health journal established.

The early discovery of infectious cases is of the greatest possible importance, and I know of no way of accomplishing this except by the regular visits of inspectors and the enforcement of severe penalties on persons found attempting to conceal such diseases. For example, in addition to the usual methods of reporting such cases, there should be trained inspectors, young physicians, possibly medical students, or others, who should regularly, perhaps once a week, visit every tenement and lodging house in a city and report all suspicious cases. This would also act as a check on those physicians who are not in the habit of reporting their contagious cases, and they, too, should be subject to severe penalties.

Dr. Gihon says: "The sanitary inspector is destined to become the most important agent of civic administration," referring to this officer in a general way.

I believe that immediate removal to hospital of all contagious cases is an absolute necessity to surely prevent their spread.

G. H. M. Rowe, superintendent of the Boston City Hospital, says: "Not removing a person with an infectious disease to a hospital or to some place securing absolute isolation should be held as a punishable offense against society."

We need more hospitals for scarlet fever and diphtheria, and it would be advisable to have in a town like this, for example, a number of small hospitals in different convenient parts of the city. Preferably these should be near the river or outskirts, away from habitations and where land is reasonably cheap, and they should be of severely plain and simple, even temporary, construction. Each of these hospitals should have an ambulance, and every case of scarlet fever and diphtheria should be immediately taken by them to the hospital. A possible exception might be made of cases occurring in private houses, where the inspectors were satisfied of the ability and willingness of the people to carry out proper precautions under the direction of the inspector. His power to remove should be absolute in all cases, except that dwellers in private houses should have right of appeal to a higher health officer.

It might be well also to have a special hospital for patients who could pay for their care.

Wherever the cases are treated and wherever they have been, insects of all kinds should be as far as possible excluded. The danger from insects is apparently well shown by a report by Dr. Biggs of twelve cases of cholera occurring in 1892 in the neighborhood of New York, in which seven of the cases arose in the families of butchers and, of the remaining five, all but one were in persons connected with some business of food supply.

Cats, dogs, and other animals should also be excluded, for they, too, may carry infection.

With regard to the treatment of cases, when once in a proper hospital, I have nothing to say. That may be regarded as perfected so far as the further spread of the disease is concerned.

A further necessity to prevent the dissemination of these diseases would be the removal to a place of quarantine detention of all persons known to be exposed to the affection. This would certainly be an immense undertaking at first, but it is one which would be, I think, absolutely essential to success. It would necessitate the use of an island or large grounds, where all exposed persons could be kept during the period of quarantine.

With the rapid reduction in the number of cases which, it might be reasonably hoped, would follow such radical measures, the number of persons to be quarantined would also rapidly diminish.

The next step in the management of these cases would be disinfection of the premises, the clothing, and other infected articles. The details of this work have been so nearly perfected that it is only necessary for me to refer you to such works as Nuttall's *Hygienic Measures in Relation to Infectious Diseases*, or Dr. Seibert's report to the Academy on Disinfection during Cholera in Berlin and Hamburg (*N. Y. Med. Jour.*, Dec. 10, 1892), and to a paper by Dr. Biggs published in the *Medical Record*, July 22, 1893. Only there should be mentioned the advisability of medical inspection of the work of disinfection, as perhaps the ordinary employees of health boards are too apt to do their work perfunctorily; and also the need of plenty of disinfecting stations of the latest design and full equipment.

I might further mention the total destruction of old infectious centers and the use of a mixture of paraffin and turpentine for treating infected floors.

In country districts and small towns the execution of the above-mentioned measures would be difficult on account of the almost invariable absence of proper places to which contagious cases can be taken. Possibly, sometimes, there is a miserable pest house, but usually even that is absent.

In the past two years I have been obliged in my small town to treat two cases of small-pox in their homes.

Two other cases occurring in my practice show well the evil that may come from lack of isolating hospitals in the country. Both were cases of diphtheria. In the first case the rich lady, whose coachman was the patient, bundled him off to the city by the way of a public hack, the railroad train, and the elevated cars. The second went from her boarding house to the city on the trolley and the elevated railways.

The cost of the string of cases of diphtheria that may have started from these two can only be guessed at.

It should be part of the duty of the health society or of the national bureau to have local officers or branches in small towns for the purpose of stirring up local officials and of educating the sentiment of the people to the point of providing and maintaining isolating hospitals—for the hospital service of any town is far from complete without a department for isolating any infectious disease—or the society or the government might advance money for this purpose, as suggested by Thorne.

Once let the diminution of these diseases begin to be perceptible and it would proceed with ever-increasing rapidity under a thoroughly organized and widespread system of sanitary work and an educated popular feeling.

I wish I could refer in detail to the good work done, showing the possibility of limiting outbreaks of infectious diseases by proper measures, in Massachusetts, in Michigan, in Italy, and in some English towns, but want of time forbids. I can only refer you to the reports of the health boards of these States, to Dr. Thorne's *Diphtheria; its Natural History*, etc., and to a report to the Italian Government, by Dr. Panizza, in which he shows a diminution of 43·17 per cent. in infectious disease in five years as a result of the sanitary awakening in that country.

The prevention of the dangers arising in schools is a point of greatest importance, to which I wish to direct your attention for a moment.

The often-suggested plan of daily inspection of the children's throats is the first I have to mention. The usually proposed method might be modified in the following manner: It should be a part of the education required of teachers to learn how to examine throats and to know a normal throat from an abnormal one. It should then be the duty of every teacher to examine the throat of every child in her department each morning, using to depress the tongue, if necessary, a piece of thin wood, fresh for each scholar. Probably children would soon learn to show their throats without a tongue depressor, and the education of their throats thus acquired would be valuable help in allowing easy local treatment in case of contagious throat disorder at any time arising.

All cases in which the teachers should find the least suspicion of sickness should be sent to a special room to await the regular morning visit of a physician, who could determine the character of the illness and whether the child should return to school, to its home, or to the hospital. A physician could thus visit several schools in a very short time. Or, better, each school should have a different physician, living in its immediate neighborhood, whose duty it should be to visit the school at the opening hour and examine all cases sent to him by the different teachers.

Both teachers and physicians would soon become experts at this work; little time would be required for the daily examination, if each teacher had only to look at the children of her own room, and little of the physician's time would be taken up. And yet I think it would be most efficient in preventing the spread of contagion in schools. It would become a matter of pride with each teacher not to let a case of infectious disease be found undetected in her room.

It might be well also, on account of the persistence of the infectious agents of scarlet fever and diphtheria in patients and their clothes, to fix a long, arbitrary time of absence from school after recovery—as long as three months perhaps—for scarlet fever may desquamate as long as that, and tonsillar follicles and recesses of the nasal cavities may hold the *Bacillus diphtheriæ* probably long after bacteriological examination of the throat might fail to demonstrate them.

Dr. Thorne, whose words I have so often quoted, says that no child who is suffering from any form of sore throat should be allowed at school, nor even any one from the house in which that child resides.

The sanitary condition not only of schools but of all public assemblage rooms should be regulated more carefully by law in regard to plumbing, ventilation, light, cleanliness, and the character of the furnishings.

It is not so very absurd to suggest that all public assemblage rooms should be built, as has been suggested for schoolrooms, with as strict attention to facilities for cleaning and ventilating as are our modern operating rooms.

A similar suggestion has been made in respect to hotels, steamboats, and other places of public accommodation.

In regard to the possibilities of the distribution of infectious diseases through our public means of transportation, there is little need for argument. That the elevated and surface cars of our city are prolific spreaders of disease is, I think, undeniable. The way of remedy is plain. We should have ampler and cleaner public transportation; no crowded, steaming elevated cars, no filthy mats, but floors so built that they could be cleaned daily by flushing with water, or, if mats are an unfortunate necessity, their frequent cleaning and disinfection by steam.

We may hope to gain something in time from an improvement in our class of tenement houses, a tendency to which is becoming certainly more evident. Among other points, the advisability of making the height of tenement houses certainly not greater than the width of the street should be considered.

Many of our tenement streets are also too narrow; but this and all other causes of street unsanitariness pale in insignificance before our elaborate and costly system of how not to clean streets.

Till these are cleaned, as in the best foreign cities, by daily flushing with volumes of clean water, I do not believe we shall approach a proper sanitary condition in cities. I see no other way to effectually and safely clean our streets of the filthy slime, the filthy snow, the decomposing animal and vegetable refuse, the wet or dry powdered horse manure, the tuberculous sputum, and the germs of a dozen different infections that defile them, except by flushing with water.

If the millions spent every year in running dust-scattering brushing machines, carts, and dumping stations were put into the building and maintaining of pumping works scattered along the water fronts of our cities, or if some other source of supply were found to furnish water to flush them, we should then have a method of street cleaning that does clean streets.

All sources of public food supply should be subject to inspection. I would like to emphasize this particularly in regard to milk, because in numerous instances epidemics of scarlet fever and diphtheria have been traced directly to this article. I think all persons who furnish milk for the public market should be required to have a license, and their farms and animals be subject to regular inspection; that retailers of milk should do so only under a license, and that they should be required to be able to tell at any time from what source any given sample of their milk was brought. If it is right and necessary to inspect any man's business for the protection of the public it is right to inspect a milk supply. We do inspect boilers and elevators, but we peacefully allow ourselves and our children to be supplied with diluted cultures of the bacilli of typhoid fever, scarlet fever, or diphtheria.

There are many other sources of contaminated food supply. For instance, I know of a cesspool containing typhoid bacilli, from which a scavenger draws tankfuls of sewage and sells it directly to a market gardener, who uses it to fertilize his lettuce, cabbage, spinach, and celery which he sends to you in the city.

I have merely touched upon this great subject, as great as any that doctors have to handle. I hope I have not been presumptuous.

As we look back over the matter, we may ask ourselves these questions:

Would it be worth while to try, at so great cost, to fight these foes to a finish?

We have but to look at our published mortality tables to see the infinitely greater cost we are bearing all the time.

Is it possible for us to win the fight?

My answer is, that it is simply a question of education, of organization, and of faithfulness.

How shall the fight be fought?

The answer to this I hope can be found in the feeble words with which I have tried to express my thoughts, and in the words of the multitude of writers on this subject whose works are springing up like blades of grass in springtime.

In conclusion, I wish, in self-support, to quote the words of Dr. Fischer, who asks the question, "Can we exterminate these infectious and contagious diseases?" and answer, "I believe we can"; of Dr. Adams, who says, "Our aim should be the ultimate extinction of all germ diseases"; and the grand words of Dr. Thomas, as true as they are inspiring: "Were I offered to-day by some great power the accomplishment of one wish, I think that I would select the destruction of the process by which alcohol is created. . . . I would select as the wish nestling closest to my heart the abolition of alcohol. If this were denied me, I would choose the power of stamping out forever those contagious diseases which fill our graves with curly heads and dimpled cheeks and our homes with sorrow that knows no comforting. I would destroy those terrors of the household—scarlatina, diphtheria, and the host of contagious maladies which go hand in hand with them. The first of these wishes is impossible of attainment. But what of the second? Gentlemen, the way to its accomplishment is open to every man with willing hand, determined mind, and intelligent brain who stands before me now. Surely it is not too sanguine a prediction that the next century may see the extinction of contagious diseases."

STATE AND MUNICIPAL REGULATION OF PROSTITUTION.*

By AARON M. POWELL,
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When Dr. Sanger wrote of prostitution in 1858, the number of women living as prostitutes in the city of New York, from information given by the then Chief of Police Matsell and from other sources, was estimated to be six thousand. In a paper prepared for the World's Congress on Social Purity, held in Chicago in June, 1893, the Hon. Elbridge T. Gerry states that Superintendent Byrnes, of the Police Department, and himself compared notes with exactly the same result, and, viewing the matter from two different standpoints, they were agreed that the present number of prostitutes in New York city was at least forty thousand.

But prostitution is not an affair of one sex only. The purchasing copartners of these forty thousand prostitute women are men. How numerous these male prostitutes are can be known only approximately.

Dr. Sanger, writing of the liability to infection and of the economic aspect of prostitution, says: "The supposition that a prostitute submits to but one act of prostitution every day is 'ridiculously small.' No woman could pay her board, dress, and live in the expensive manner common among the class upon the money she would receive from one visitor daily; even two visitors is a very low estimate, and four is very far from an unreasonably large one."

If, therefore, we may accept as substantially accurate the estimate of Superintendent Byrnes and Mr. Gerry that New York has at the present time forty thousand prostitute women, and also Dr. Sanger's that four would be a reasonable estimate of the average number of daily visitors to each, we have an aggregate of at least a hundred and sixty thousand prostitute or immoral men in the metropolis.

Large as these figures appear, there is no good reason to believe that New York, in proportion to its entire population, is immoral beyond other of our larger American cities and towns. The evil is widespread in all our large centers of population. All along the pathway of human history, in the remotest periods as in modern times, prostitution has been a conspicuous social factor. It has been and continues to be destructive not only of physical health and of the finer qualities of womanhood and manhood, but is also a great economic waste.

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Dr. Sanger estimated that the average weekly income of each courtesan could not be less than ten dollars. He says: "Many pay much more than that sum for their board alone, and in first class houses it is not uncommon for a prostitute to realize as much as thirty or fifty dollars or upward in a week. But if the income is taken at the lowest point, the aggregate receipts of six thousand courtesans amount to $60,000 per week, or $3,120,000 per year."

If, however, there are now forty thousand courtesans in this city with an average weekly income of but ten dollars each, the cost in money to their male patrons is fully $400,000 a week, or $20,000,000 a year. If, as is strongly probable, the present weekly average income is at least twenty dollars, the yearly expenditure of dissolute men in New York upon prostitutes would aggregate over $40,000,000!

But Dr. Sanger notes also another large item of expenditure in connection with prostitution—viz., for wines and liquors. He estimates that the patrons of brothels generally pay at least two thirds as much for wines and liquors as to the women inmates with whom they consort; that, at the time he wrote, the weekly outlay for liquors by the patrons of the six thousand prostitute women was fully $40,000, or $2,080,000 a year. That the wine and liquor expenditure in connection with the brothels of New York is relatively quite as large now as in 1858 is strongly probable. We may, therefore, properly add at least $25,000,000 for liquors to the $40,000,000 paid to the prostitute women of the brothels of the city, or a total outlay of fully $65,000,000 a year in connection with prostitution.

Sensual men not only pay a heavy tribute to vice, but they stimulate a cruel traffic in dependent women and girls to supply the demand of their unrestrained passions.

THE STATE AND PROSTITUTION.

Of an evil of such magnitude, attended with consequences so grave as affecting the health and general welfare of the individual and of the community at large, of course the State should take cognizance. The Old World method has been for many years to license or regulate it with police and medical surveillance of prostitute women.

This government plan is based upon the assumption that vice is a necessity for men, and that a certain class of women must be set apart to minister to their lust. This sentiment was voiced by Lecky, the historian of European morals, when, referring to the woman of this victim class, he said: "Herself the supreme type of vice, she is ultimately the most efficient guardian of virtue. But for her the unchallenged purity of countless homes would be polluted, and not a few who, in the pride of their untempted chastity, think of her with an indignant shudder, would have known the agony of remorse and despair. On that one degraded and ignoble form are concentrated the passions that might have filled the world with shame. She remains, while creeds and civilizations rise and fall, the eternal priestess of humanity, blasted for the sins of the people." If men were as bad as this picture would indicate, and the prostitute woman is the heroine she is thus painted, the judgment of society concerning her should be reversed, and, instead of being ostracised as now, she should be honored and canonized. The root of the regulation system is in the dual standard of morals, one for men and another for women, of which Lecky is an exponent.

Experience has abundantly demonstrated that this one-sided plan of government regulation, which licenses a few women to pursue prostitution as a trade, subjecting them to compulsory registration, with illusory periodical examinations, while allowing their miscellaneous male patrons full liberty to disseminate disease at their will, and leaving also an always large army of clandestine prostitutes without any surveillance whatever, is worse than a sanitary failure, and serves rather to stimulate than to check prostitution itself. Law is in itself an educator, and may educate downward as well as upward. When the State, by its license and official certificate, gives to the prostitute a legal status, and at night, as in some European cities, puts up its colored signal lights in front of its brothels, it in effect consigns a victim class of its women to an odious form of slavery, digs pitfalls for its young men, and perverts the true function of government, which, as defined by Gladstone, the "Grand Old Man," is "to make it easy to do right and difficult to do wrong."

THE ST. LOUIS EXPERIMENT.

America has had but a single noteworthy experiment of licensing prostitution, and that was in St. Louis. Though after four years of trial it was abandoned as an ignominious failure, in both a sanitary and moral point of view, leaving the condition of the city at the last worse than at the first, it is still quoted with approval, from time to time, by American advocates of regulation. It is cited by the Director of Police of Cleveland as a justifying precedent for his disgraceful compulsory registration scheme, inaugurated a few months ago and now in operation in Cleveland, and which one of the police commissioners of this city was recently quoted as saying he should approve for New York.

It was in 1870 that the license system was inaugurated in St. Louis. The authority for it was obtained by a legislative trick, the interpolation, without debate, of the two words, "or regulate," into an amendment of the city charter, intended, as was generally supposed, to suppress prostitution. The legal effect of this amendment, as was subsequently decided by the Supreme Court of the State of Missouri, was to repeal all State laws prohibiting prostitution, so far as St. Louis was concerned, and to give to it a business status as a legitimate industry. A German municipal office-holder was deputed to visit Europe, to familiarize himself with regulation laws there. An ordinance was subsequently adopted requiring the registry of prostitute women. The city was divided into six districts, with one medical examiner to each. The salaries of the examiners were from twelve hundred to twenty-five hundred dollars per annum. Each examiner was required to visit the houses and apartments of prostitutes, to make inquiries, and, *if he thought best,* physical examinations. He was to give such sanitary directions as he might deem best to render prostitution safe, and to order any of the prostitutes to be removed to the hospital whose condition, in his opinion, required it. The keepers of licensed houses were required to pay a tax of ten dollars a month, and one dollar a week for each prostitute therein; each prostitute fifty cents a week. Each registered prostitute paid about twenty-six dollars a year, and each keeper of a brothel an average of about three hundred dollars a year. As compared with the French system, the St. Louis experiment differed in appointing but a single examiner to visit, unattended, prostitute women and girls in their own houses and apartments, and there to make physical examinations, or not, at his own discretion. It is not at all surprising that the experiment excited much moral indignation and disgust on the part of good citizens—men and women—and that, so far as sanitary results were concerned, it should end in a disgraceful failure. The regulationists of St. Louis, especially those connected with its board of health, attempted to show by the figures of the earlier registrations, made at intervals of a few months, a diminution in the number of prostitutes. Dr. William G. Eliot, the honored president of Washington University of St. Louis, who made a most thorough, impartial investigation of the whole matter, says of this allegation of a diminished number of prostitutes that: "In fact, they had scotched the snake, not killed it, and in all probability the number of prostitutes had not been diminished at all. . . . To scatter a nest of hornets," he says, "is a very different thing from its destruction."

The sequel during the progress of the experiment proved an increase of thirty-four per cent. in the number of brothels, and an increase in the number of registered women of more than thirty-five per cent. There was also an undoubted increase meanwhile of clandestine prostitution. Concerning the sanitary aspect, Dr. Eliot says: "What is still more startling, when the stamping out process is examined, it appears that while the number of diseased women under treatment in 1871 was eighteen out of four hundred and eighty, or three and three fourths per cent., it has risen now (1873) to an average of forty out of six hundred and fifty-three, or over six per cent; showing the remarkable fact—to which, however, we can find a parallel in Paris itself—that even among the registered and regularly inspected prostitutes the hateful disease may increase; a result which, though unexpected, ought not to surprise us so long as the male prostitutes are themselves exempt from medical inspection." How incomplete was the registration and of how little practical value, in a sanitary point of view, the system of medical inspection was, may be seen from the significant figures presented by Dr. Eliot, taken from the reports of the chief of police of St. Louis for the years 1871 and 1872. He says: "The year 1871, ending March 31st, shows that out of 3,722 females arrested, 1,526 were prostitutes and 218 keepers of bawdy houses (the Board of Health report of the same date shows 480 registered prostitutes and 99 keepers), being a total of 1,744, or forty-six per cent. of all females arrested. The year 1872 shows that out of 3,187 females arrested, 2,613 were prostitutes and 71 keepers of houses, or a total of 2,684, being over sixty-four per cent. of all females arrested, and an increase of 940 prostitutes arrested, or eighteen per cent. more than the previous year."

Dr. Edmund Andrews, of Chicago, whom you will undoubtedly recognize as good medical authority, also made a very careful investigation of the St. Louis license experiment. Commenting upon its sanitary results, he says: "The authorities in St. Louis, at the time of their effort, made a show of great diminution of venereal diseases in the hospitals and charity institutions *under their control,* after the license law went into operation.

"Knowing that it is easy to make a delusive show by simply exerting a pressure through the head officers to keep out some cases, and to falsify the records of others by putting down complicated cases under other heads in the record, and omitting to enter the syphilitic part as well as by calling all doubtful cases by other names, I determined to inquire of an institution *not under their control.* I therefore got the statistics from the United States Marine Hospital there for nearly a year before and after the time when the license law went into effect. The result was that the Marine Hospital of St. Louis showed an actual increase of the percentage of venereal diseases among its patients when the license system went into operation."

I have dwelt somewhat in detail upon the St. Louis license experiment, because it is, practically, the only important American precedent of its kind, and because of an inclination shown latterly, even at this distance of time, to use it in justification of efforts for municipal regulation, as at the present time in Cleveland, and as ominously foreshadowed in the recent comment of the Police Commissioner of this city.

When it was discovered by the better class of people of St. Louis what had been accomplished by legislative legerdemain, that license for the social evil had actually been inaugurated, much indignation was aroused and a vigorous agitation for repeal begun under the influential leadership of Dr. Eliot. A petition for repeal was signed by four thousand women of St. Louis, and presented to the Missouri Legislature. The archbishop, bishop, and Catholic clergy, nearly all the Protestant clergy, and a majority of the St. Louis bar were enlisted in the cause of repeal. A repeal petition was signed by over a hundred and fifty physicians and lawyers. The Legislature of 1873–'74, after a prolonged and embittered discussion, finally voted the repeal by a vote of three fourths of all the members of the Senate, and in the House by ninety to one. Thus ended the license experiment in St. Louis, after having been in operation about four years.

Several attempts have been made to revive it, but they have been confronted with, and defeated by, an overwhelmingly adverse public opinion based upon the four years of unhappy experience.

REGULATION ABROAD.

It was in 1864 that by act of Parliament, supplemented by additional legislation in 1866 and again in 1869, the regulation system was introduced in Great Britain, under the name of the "Contagious Diseases Acts." They were applied to sundry military districts, ostensibly to promote the health of the army, but with the purpose on the part of their projectors, later avowed, ultimately to extend them also to the civil population. When their real character and object became known, a vigorous repeal agitation was begun, under the leadership of a gifted, noble woman, Mrs. Josephine E. Butler, which was continued for twenty years. At the end of the two decades the repeal movement was triumphant, and the acts were swept from the statute books. During the prolonged contest the battle of statistics was many times fought, and with great earnestness on both sides. Figures were employed to prove both the hygienic success and failure of the acts.

Within the proper limits of this paper I can not enter largely into the details of this statistical controversy. It was quite clearly shown that at some of the military stations under the acts there was a decline in the percentage of venereal maladies after their adoption. But it was quite as clearly shown also that this decline, from other causes, had begun prior to the passage of the acts, and that it was even greater after their passage in sundry districts not under their control. Dr. John Chapman, in the *Westminster Review*, in an able summary of the testimony given before a royal commission on this subject, says: "The average annual ratio of admissions to hospital on account of primary venereal sores was lessening at ten out of fourteen stations under the acts before they became operative; and in the course of definite periods before they did so, equal in length to the periods which have elapsed since the acts were put in force, the average annual ratio of admissions at those ten stations *lessened 2·8 more rapidly* than it did during the corresponding period since the acts were applied."

In the districts under the acts it was claimed by the advocates of regulation, and figures were cited to verify the claim, that there was a generally decreasing number of registered prostitutes and of houses of prostitution.

On the other hand it was shown that while registered prostitutes decreased, clandestine prostitutes increased; that prostitutes in the districts under the operation of the acts, who refused to register, migrated in large numbers to the adjacent districts wherein the acts were not in force, and continued to ply their vocation. More absolute power was asked for over the persons of all single or suspected women, to the end that prostitution might thus be controlled.

But the acts were opposed, and their repeal was demanded by many distinguished men and women. John Stuart Mill spoke strongly against them, and the irresponsible power delegated by them, declaring: "It is wrong to give men powers liable to abuse, and then assume that they will not be abused."

Dr. Nevins, after a most careful and exhaustive examination of the whole subject, summarizes the sanitary results of the acts as follows: "After sixteen years' adoption, the rate of improvement in primary venereal sores* in the subjected portion of the home army was reduced from 6·7 per cent. yearly for the six recorded years before the acts, to 0·65 per cent. yearly during the sixteen years of the acts. *Inefficiency* in the navy (twenty thousand strong) increased from one hundred and seventy-two men daily to two hundred and thirty men daily. Venereal disease rose among the registered prostitutes by above thirty-nine per cent. (from 121·6 to 169·5)."

Dr. John Simon, of whom the Right Hon. James Stansfield, the parliamentary leader for repeal, says: "No man has done more—no man has done as much—for sanitary science in this country," was appealed to by regulationists to aid the movement for the extension of the acts to the civil population. He declined, saying: "I very decidedly refrain from recommending any change in that neutral position which English law has hitherto held in regard to the venereal disease of the civil population. So far as my present knowledge enables me to judge, I believe that any departure from that position could do little but embarrass and disappoint."

The acts were not only not extended to the civil population, but were unconditionally repealed April 13, 1886. In India and some of the colonies under British rule, despite the adverse action of Parliament, regulation still continues, but in an irregular way, by the connivance of delinquent officials.

In 1871 an act was passed in India for the army there, similar to, but much more severe than, the English acts; for the fortnightly periodical examination of the women in England was replaced by a weekly or even daily examination in India, with the result, says Dr. Nevins, that the venereal diseases *rose* steadily year by year in the British troops in India from 196·8 per 1,000 in 1871 (the year the act was passed) to 371 per 1,000 in 1888 (the latest year officially published), an increase of eighty-eight per cent. in the seventeen years of the acts there.

Following this large increase of eighty-eight per cent., a new and startling order was issued by the commander in chief in India in June, 1886, to the commanding officer in every cantonment in India. It declared "The *medical officers* were to see that the examinations, etc., were strictly carried out, and the *commanding officer* was to take care that *sufficiently numerous and sufficiently attractive* prostitutes were provided for every cantonment, and that the quarters in which the women were lodged were *sufficiently comfortable and attractive to satisfy the demands of both the women and the men.* If their quarters do not already comply with this it was to be reported, and the deficiencies supplied as quickly as possible."

Of the sanitary results, Dr. Nevins says: "The latest officially published hospital statistics for India are for the northwestern province of India and Oudh (1886), containing fourteen large cantonments. In four of these one prostitute was provided for every seventeen men; in three of them, one for every 9·9 men; in four of them, one for every 7·25 men; and in three of them one for every 3·9 men, with the following result:

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* This one form of disease is specified because it is acknowledged in the army reports that gonorrhœa was not sensibly improved by the acts in the subjected as compared with the unsubjected stations, and the comparison between the two classes of stations was never made for secondary syphilis.

Number of stations.	Number of men to one prostitute.	Cases of all forms of venereal disease to the thousand men.
4	17	170
3	9·9	263
4	7·25	402
3	3·9	546

"As these results are not satisfactory, still more stringent regulations are talked of as necessary."

In Continental countries there is a strong and an increasing tide of opinion against the continuance of State regulation. In Paris, Berlin, and other European capitals, which have long had police and medical surveillance of prostitutes, prostitution, and the diseases incident thereto, are most prevalent. Many an American physician can testify, if he will, of cases of infection among his own patients who, going abroad, have thought they could do with impunity in Paris in the way of sensual indulgence what at home they would hesitate to assume the risk of, because of the supposed greater safety in Paris. In Paris the *police des mœurs*, or so-called "Bureau of Morals," so long presided over by Lecour, the "Bismarck of the Parisian regulation administration," has been supplanted by the regular police of the city, who, under the direction of the present Prefect of Police, M. Lepine, now have the power of arresting women under the regulation code. While at the head of the *police des mœurs*, Lecour, with all his vigilance, was forced to acknowledge the practical failure of his system. He said:

"The administration has redoubled its activity, it has multiplied its acts of repression with regard to prostitutes, and it has definitely succeeded in maintaining a satisfactory condition of the sanitary state of public registered girls, and yet *sanitary statistics prove that prostitution is increasing, and that it is becoming more dangerous to the public health.*"

Again, "M. Lecour, the prefect of the *police des mœurs* in Paris, in the last edition of his work on Prostitution in Paris, published about 1873, says at page 47: 'Not only the police, but all the world knows the cause of the *increase of prostitution*—religious feeling is weakened, and tolerance of venal and scandalous intrigues has entered into our ethics'; and at page 57 he says: *We may recognize amelioration as far as outward disorder is concerned*, but we are none the less sensible that *the ever-rising tide of debauchery* is due to causes which repression—*i. e.*, the police—can not reach."

"Dr. Jeannel, of Bordeaux, in his work on prostitution, pages 1 and 2, bitterly reproaches M. Lecour for the increase of profligacy in Paris. He says, page 182: 'The streets of Paris and all places of public resort are crowded with the abandoned.' Page 196: 'Cabs, coffee houses, public houses, railway stations, theaters, hotels, lodging houses, and shops are used as their lair or hunting grounds.' Page 386: 'Scandalous scenes are enacted in the streets, and the *hospitals for venereal diseases* are *crowded.*'" And this, be it observed, is not the picture drawn by a "fanatic" or an ignorant opponent of the system, but by one of its most enthusiastic advocates.

The Municipal Council of Paris, December 28, 1880, passed a repeal resolution after long controversy, and in its preamble recited that "The Municipal Council, considering that the institution of the *police des mœurs* is destructive of the principle of individual liberty, *without succeeding* in accomplishing the end it proposes to aim at, *either in the diminution of venereal diseases* or in the prevention of offenses against public order," etc.

In Berlin the young German Emperor recognizes the alarming prevalence of vice and the evils which attend it, and is disposed to encourage the efforts of the Salvation Army and other methods of reformation. In France, Switzerland, Italy, Germany, Belgium, Holland, Denmark, Sweden and Norway, a vigorous agitation has been inaugurated for the abolition of State regulation, and in sundry municipalities and localities in several of these countries abolition has already been accomplished.

THE INTERNATIONAL FEDERATION FOR THE ABOLITION OF STATE REGULATION OF VICE.

The International Federation for the Abolition of State Regulation of Vice, of which Dr. J. Birkbeck Nevins, of Liverpool, is now president, organized at a great congress held in Geneva, Switzerland, in 1877, with over five hundred delegates, representing fifteen countries, and which it was my privilege to attend as an American delegate, has now adherents in nearly every country in Europe, and also includes among its members many eminent physicians, jurists, and philanthropists. The Geneva Congress was divided into five sections, one of which, the hygienic, was presided over by Dr. De la Harpe, a distinguished physician of Lausanne. After prolonged and thorough consideration of the subject by the section, which included physicians and others familiar with the practical workings of regulation in their respective countries, its members were unanimous in adopting a series of declarations or resolutions, which have since been in substance reaffirmed by several succeeding congresses, one of which says: "The Section of Hygiene condemns, in view of their complete failure, all systems of *police des mœurs* whose object is to regulate prostitution. The section bases its condemnation on the following among other grounds—namely, that the obligatory surgical examination of women is revolting to human nature, that it can only be carried out in the case of a certain proportion of the prostitutes, that it is impossible to rely upon this examination to discover the most serious constitutional form of venereal maladies or to hinder its progress, and that consequently it gives a false guarantee of the health of the women who are subjected to it."

Among the European physicians of high standing who are adherents of the International Federation, and whose labors in connection therewith have been influential against the continuance of the regulation system, besides its venerable president, Dr. Nevins, of Liverpool, are Dr. Moeller, of Brussels, Dr. Forel, of Zurich, Dr. Giersing, of Copenhagen, and Dr. Elizabeth Blackwell, of London.

MUNICIPAL REGULATION IN CLEVELAND AND OTHER AMERICAN CITIES.

In this country, since the repeal of the Contagious Diseases Acts by the British Parliament, efforts to secure regulation by State action have generally been abandoned. We have latterly, however, in some cities municipal regulation, and in most police toleration of vice. In Cleveland the Director of Police has inaugurated a registration system, which is now in operation. He has already enrolled the names of upward of a thousand women and girls, who, as a condition of immunity from arrest, are required to report weekly at police headquarters, and to bring with them certificates of health. They are left at liberty to choose their own doctors for the examinations. I am advised by a Cleveland correspondent that in some cases young medical students are making these examinations for the small fee of a dollar each as a means of helping themselves along in their medical education! It is not surprising to read in the Cleveland *World* of February 10, 1894, that "the social evil is flourishing in Cleveland under his (Director Pollner's) rule as it has never flourished before. The women think they are exempt from arrest, and consequently are very bold." The *World* also says, referring to the so-called health certificates: "These examinations are usually made by young physicians with little experience, or by doctors who cater to that class of practice. They are not worth the paper they are written on, and the result is that there has been a large increase of disease during the past few months. Experienced physicians state that it is impossible to ascertain disease by any such examination, and that many people who formerly were afraid of visiting houses of this kind for fear of contracting some terrible disease, now go there frequently, thinking they are safe."

Another city wherein latterly a kindred scheme of municipal regulation has been inaugurated is Davenport, Iowa. A Davenport correspondent writes me: "The present mayor of our city requires inmates of houses of prostitution to be regularly examined by physicians, and to report any change of residence. If keepers of such houses and the inmates will appear at police stations when notified (at least once a month) and pay fines and costs, there are no arrests made either of them or visitors, unless in case of disturbance of the peace. As a result, it is reliably reported that boys, who were heretofore deterred from visiting such places for fear of it becoming known, are now to be seen in and about these places in large numbers." In Omaha the municipal authorities collect a monthly "fine" of the proprietors and women inmates of houses of debauchery, with promised immunity from arrest, which "fines," aggregating about $24,000 a year, to give a semblance of respectability to the shameful arrangement, they appropriate to the support of their public schools!

Social vice has become an important factor in the prevalent municipal misrule. Of this fact New York furnishes a striking object lesson. With a spasmodic show of law enforcement, made from to time, but with an obvious ulterior purpose, the police, and the municipal and political magnates who direct their action, instead of aiming at repression in good faith, really tolerate and in effect protect, for a consideration, the brothel. New York has practically, without the warrant of State law, a system, if it can be called such, of police-regulated vice.

Allied with the saloon and with the gambling evil, the brothel has become a most prolific source, not alone of physical disease and moral degradation, but also of political corruption. Municipal tampering with vice, as a substitute for repression, by irresponsible police methods, as in Cleveland, Davenport, Omaha, New York, and other American cities, is a present dangerous tendency.

WHAT THE STATE MAY DO.

The State can not do, and ought not to be expected to do, impossible things. It can do nothing effectively, except as law is vitalized by public opinion. It ought on no account to give to prostitution a legal status, a recognized right to be. Its aim should be the utmost restraint and ultimate abolition. It ought to be fair and just alike to women and to men. It has hitherto dealt too exclusively with women. It rightfully interdicts the brothel as the gambling den. It also rightfully prescribes punishment for the keepers of houses of public debauchery, and for those who let houses or other dwellings for such purposes. It ought vigorously to punish the incitement of minors, of either sex, to debauchery, and especially procurism—the traffic in girlhood. It ought also to severely punish the kidnapping, hiring, or corruption of minors for purposes of debauchery. Its penalties should include imprisonment as well as fine. Fines alone, in most cases, are readily paid, and amount to little more than a tax upon vice, with a minimum of restraint. Especially for the capitalists of vice, the proprietors of brothels, and the owners of property rented for their use, the prison only is of value as a deterrent. With them fines are a mere incident; the prison bars they still have a wholesome dread of.

The State and municipality ought also to provide ample hospital facilities for the treatment of venereal diseases, as readily as for all other diseases.

THE PHYSICIAN'S OPPORTUNITY AND RESPONSIBILITY.

The physician, beyond any and all others, has it in his power to so mold public opinion, especially concerning the sanitary aspects of prostitution, as to make it practicable for wholesome repressive laws, in the interest of morality and health, to be enacted and enforced. It was the irresistible force of medical testimony against the Contagious Diseases Acts, combined with the moral protest, which rendered their final repeal inevitable. It is the weighty condemnation of the regulation system in Continental Europe by eminent physicians and sanitarians, in conjunction with moral power, which already foreshadows its abolition in the near future. So the voice of the medical profession here, directed against State and municipal complicity with vice, may and should so enlighten public opinion as to reduce public prostitution to a minimum, by making possible the enforcement of wholesome legal restraint. There is still abroad the popular heresy that for men vice is a necessity, and that young men must sow "wild oats." What is morally wrong can not be physiologically right.

May physicians everywhere be quickened to declare, with the late Sir Andrew Clark, that immorality is not a necessity, and that chastity for all is a human possibility.

A CASE OF MULTIPLE PREGNANCY

WITH FORTY-SIX HOURS BETWEEN THE BIRTH OF FIRST AND SECOND CHILD.

By J. LAURENCE CALLAHAN, M. D.,
NORTH LA CROSSE, WIS.

Patient, Mrs. F., primipara, aged forty-six years; married ten months; born in Ireland; always enjoyed good health. During pregnancy her health has been excellent, and she has been able to attend to her household duties up to time of confinement.

She began to have pains about 7 P. M., March 1, 1894. I was called at 11 P. M. of the same day. Upon digital examination I found the bag of waters ruptured, os fully dilated, and by palpating the abdomen I diagnosticated multiple pregnancy. The pains were regular and strong and recurring every three minutes. At 1 A. M., March 2d, I delivered her of a healthy female child.

After waiting about twenty minutes I endeavored by manipulation to bring on the expulsion of the placenta, but was unsuccessful. Pains had ceased entirely. Her pulse being normal, with no danger of hæmorrhage, I decided to wait, thinking that after a few hours' rest her labor would be resumed.

After she had slept four hours I endeavored to bring on pains by external manipulation, but was unsuccessful.

She continued in this condition, with the exception of now and then a slight pain, until 10 P. M., March 2d, when she had a number of severe pains about half an hour apart, lasting until 2 A. M., when they ceased again and returned at 3 P. M. of the same day, lasting about an hour.

At this stage of her labor, however, the os had dilated to about the size of a silver dollar.

At 9.30 P. M. the os was still very rigid during the pains, and the bag of waters very tense. As the pains were recurring every three minutes I decided to rupture the bag of waters, which I did. Her pains became more intense, and at 11 P. M., March 3d, I delivered her of a healthy male child.

After the birth of the child I was unable to secure sufficient contraction of uterus to expel the placenta; the hæmorrhage was very severe, the pulse skipping every fifth or sixth beat.

I immediately introduced my hand into the uterine cavity, extracted the placenta, and found I still had another. I reintroduced my hand and found a portion of the second placenta attached to the uterine wall. I peeled it off gently and withdrew it with the blood clots which I found within the uterus. I am aware that such cases occur but rarely, and in all cases which I have read of the placenta has been expelled immediately after the birth of the child.

It will be observed in this case that the cord which was attached to the first child remained in the vagina forty-six hours. This was the obstacle in the case which gave me the most anxiety, as I feared sepsis. The mother gained strength rapidly without the development of fever, and when I called, on the tenth day, I found her sitting up.

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THE CRAZE FOR PHOTOGRAPHY IN MEDICAL ILLUSTRATION.

We agree wholly to what a correspondent who signs himself "Medicus" says in this issue of the *Journal* concerning the disregard of propriety, if not of ordinary decency, that is getting to be displayed too commonly in the pictorial illustrations found in medical literature. No medical man has the slightest right to take liberties with a patient, least of all without the patient's knowledge; yet this is what the photographic apparatus, reduced to the "you-press-the-button-and-we-do-the-rest" stage, enables an inconsiderate person—we hesitate to say a ruthless one—to do, nay, tempts him to do. We often receive photographs showing the whole or nearly the whole of the patient's figure, although they do not purport to aid in illustrating the text of the articles they accompany further than might be accomplished by a delineation of a very limited portion of the figure. In such cases, after asking the author's consent, we suppress the unnecessary parts. Not that all these pictures, or even many of them, are objectionable on the score of indecency, for that indeed they are not; but they are or appear to be of such a character as to be capable of revealing the patient's identity, which should always be avoided. We have heard of a woman who was fond of stating to chance acquaintances that she had served as the model for the leading figure in certain well-known paintings, but the judicious recognized that this propensity of hers was morbid. The normal man and the normal woman shun the notoriety that comes from public exposure of the person, and nobody has the right to thrust such notoriety upon them. The sanctity of the person should never be violated save as a matter of necessity. This is no new dictum. The medical profession has always recognized and indorsed it, but thoughtlessness now and then allows the camera to beguile an individual into its infraction.

The truth is, it seems to us, that photography is too much used in medical illustration, quite apart from considerations of decency and of the rights of the patient. It is invaluable, no doubt, within a properly restricted sphere, but most of the conditions that writers wish to show pictorially can be brought out much more tellingly in a sketch or even a diagram. The most humiliating thing of all about the rage for photographic illustrations lies in the undeniable fact that many writers resort to them mainly to support their statements, to establish their veracity. In plain words, they say to themselves that their clinical histories are likely to rouse incredulity, and that hence they must fortify them with pictures made with the machine that "can not lie." Wholly forgetting the force of *qui s'excuse s'accuse*, they do not recognize to what a depth they have degraded themselves. Let us have photographs, then, only when they answer better than other delineations, and let us give the draughtsman's art fair play.

THE TREATMENT OF DIPHTHERIA.

In the *Journal des sciences médicales de Lille* for February 10th there is an analytical review, by Dr. G. Lemière, of various recent contributions to the periodical literature of the treatment of diphtheria. The writer begins with the self-evident statement that the number of new methods which are vaunted from time to time marks a lack of any really efficacious treatment of the disease, although there are many of these methods which, if we may believe their authors, produce marvelous results. He thus proceeds to summarize the treatments relied on by various writers whose publications he takes into account. Hubner, he says, paints the affected part two or three times a day, according to the severity of the case, with tincture of chloride of iron diluted with from one to five times its bulk of water. Then he washes the throat with limewater and applies externally iced compresses together with pieces of ice. Theoretically, tincture of chloride of iron is as powerfully antiseptic as corrosive sublimate, in so far as the micro-organisms of diphtheria are concerned; according to Loeffler, it kills them instantly in a solution of 1 to 125. Moreover, its use does not involve any danger of poisoning. In fifty-two cases treated in this way, only twice did death result, and in the cases of recovery the gravity of the disease was such in six of them that the author does not hesitate to conclude that death would have supervened under any other treatment. Rosenthal gives chloride of iron internally, in a two-per-cent. solution, with the addition of glycerin, from a teaspoonful to a dessertspoonful every hour, day and night. He thinks the measure unfailing in preventing the angina from extending to the larynx. The temperature falls within twenty-four hours, the pulse becomes normal, the general condition is good, the pain is diminished, and the appetite is increased. In seventy-nine cases thus treated, only seven children died. Braun also uses sesquichloride of iron, but he is of the opinion that internal treatment alone is not enough. In order to destroy the false membranes more surely and more rapidly, we should not employ a solution, but an ointment consisting of ten parts of sesquichloride of iron and twenty parts of lanolin ointment. Two applications in the course of the day often suffice, but occasionally three are necessary. Amelioration commonly shows itself within the first twenty-four hours, and at the end of three days the disease is jugulated. While with the ordinary methods of treatment he had observed forty per cent. of deaths, he witnessed only a few with this new method.

Hornig paints the throat two or three times a day with a thirty-per-cent. watery solution of pyoctanin, and then directs the patient to take a drink at once, but not to gargle. In children it is well to avoid as much as possible allowing them to expectorate after the painting, so they should be left in bed and not carried in the arms with the head low and the legs raised, which favors the expulsion of the pyoctanin and hinders its absorption. The drug acts slowly and counteracts the poison already formed in the system. When the disease invades the nasal passages, he applies cotton tampons imbued with the same solution. He reports a hundred and forty cases thus treated; a hundred and ten observed by himself terminated favorably.

Tulle touches the false membrane every three hours with cotton tampons impregnated with a 1-to-500 solution of corrosive sublimate slightly acidulated with tartaric acid. He remarks that it is useless to seek to remove the false membrane, for it becomes detached spontaneously on the third or fourth day. At the same time he administers regularly every half hour a tenth of a grain of calomel, a grain of sodium bicarbonate, and a twentieth of a grain of ipecac until an abundant action of the bowels is produced, and thereafter repeats the dose every two hours. Besides, he gives quinine sulphate, calcium chloride, calcium citrate, and iodide of iron, in varying proportions according to the patient's age. With this treatment he reports the loss of only two children out of thirty-three.

Pilière sprays the pharynx every two hours during the day, and every three hours at night, with a 1-to-500 solution of corrosive sublimate in children over two years old and with 1-to-1,000 solution in those that are younger. He has never observed any symptoms of mercurial poisoning. He raises the pharyngeal false membranes after touching them with a tampon of absorbent cotton soaked in a 1-to-30 solution of nitrate of silver. Out of ninety-eight cases, in six of which tracheotomy was required, ninety-four ended in recovery.

Wissing employs inhalations of turpentine. He causes water to be boiled day and night in the sick-room, and adds turpentine to the water, using about six ounces in the course of a day. He also makes the patient inhale the mixed vapor directly, and says that in thirty-six hours the false membrane disappears and that poisoning never occurs. Flahaut paints the false membrane every hour or two with petroleum, taking care not to use enough of the liquid for it to trickle into the larynx. Immediately after this procedure he removes the false membrane, which seems to have become detached and dissolved under the action of the petroleum. Forty cases thus treated all terminated favorably, while in the same epidemic thirty cases treated by him according to the ordinary methods resulted in twenty-one recoveries and nine deaths.

MINOR PARAGRAPHS.

THE EVILS OF IMMODERATE EXERCISE.

This subject was treated of at a recent meeting of the *Association pour l'avancement des sciences* in a paper by M. Le Gendre, who dwelt chiefly upon the injurious effects of excessive athletic sports in the young. A summary of M. Le Gendre's paper appears in the *Revue mensuelle des maladies de l'enfance* for May. Among the injurious effects that he had observed were typhlitis and a general tendency to kyphosis of the cervico-dorsal region of the spine, due to excessive use of the bicycle; palpitation; œdema of the lower limbs in a person who had varices; increased violence of epistaxis; melæna by rupture of the intestinal capillary in a corpulent subject; a subcutaneous hæmatoma in the region of the left iliac fossa; headache, and sleeplessness.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 5, 1894:

DISEASES.	Week ending May 29.		Week ending June 5.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	5	3	3	0
Scarlet fever	136	17	95	9
Cerebro-spinal meningitis	3	1	2	3
Measles	146	8	132	7
Diphtheria	258	67	214	71
Small-pox	55	3	19	7

The St. Louis College of Physicians and Surgeons.—Dr. Emory Lanphear, for many years editor of the *Kansas City Medical Index*, has resigned the chair of operative surgery and clinical surgery in the Kansas City Medical College to become professor of surgery in the St. Louis College of Physicians and Surgeons.

Sir James Paget's Golden Wedding was celebrated on May 23d, and on that day the General Medical Council passed a congratulatory resolution which, as the *Lancet* truly says, "gave expression to a sentiment which will be universal throughout the profession in Europe and America."

The Journal's New Quarters.—On and after the 15th inst. the office of this journal will be in the publishers' new quarters, No. 72 Fifth Avenue, on the northwest corner of Thirteenth Street.

Papaw Juice (the milky juice of the *Carica papaya*).—Mittra (*Medical Reporter*, January, 1894, p. 12) uses the juice internally, usually in doses of ten drops. He thinks "its action on the stomach as a gastric sedative of great power is seen in the magical relief which it gives in certain forms of gastric irritation and vomiting." As an antacid it is also of much value, even more reliable thus used than is bicarbonate of sodium. Locally applied it has a marked "solvent" action on polypi, warts, small tumors, etc.

Change of Address.—Dr. Emory Lanphear, from Kansas City to St. Louis.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Five Weeks ending May 26, 1894:*

MURRAY, R. D., Surgeon. To proceed to Brunswick, Ga., for special duty. April 30, 1894. To proceed to Waynesville, Ga., as inspector. May 17, 1894.

HUTTON, W. H. H., Surgeon. Detailed for duty as inspector of quarantine stations. April 27, 1894.

HAMILTON, J. B., Surgeon. Granted leave of absence for three days. May 14, 1894.

GASSAWAY, J. M., Surgeon. Granted leave of absence for fifteen days. May 12, 1894. Leave of absence extended five days. May 26, 1894.

STONER, G. W., Surgeon. To inspect Cape Charles Quarantine Station monthly. April 27, 1894. Granted leave of absence for thirty days. May 18, 1894.

GODFREY, JOHN, Surgeon. To represent the service at meeting of American Medical Association at San Francisco, Cal. May 11, 1894.

IRWIN, FAIRFAX, Surgeon. To proceed to Berlin, Germany, for special duty. May 5, 1894.

CARTER, H. R., Surgeon. Granted leave of absence for three days. May 3, 1894. To proceed to Key West Quarantine for temporary duty. May 4, 1894.

BANKS, C. E., Passed Assistant Surgeon. Granted leave of absence for five days. May 1, 1894.

CARMICHAEL, D. A., Passed Assistant Surgeon. To proceed to St. Louis, Mo., for temporary duty. May 15, 1894.

PECKHAM, C. T., Passed Assistant Surgeon. To proceed to San Francisco Quarantine Station for duty. May 17, 1894.

GLENNAN, A. H., Passed Assistant Surgeon. To proceed to Wilmington, Del., for special temporary duty. April 25, 1894.

WHITE, J. H., Passed Assistant Surgeon. To inspect quarantine stations. April 27, 1894. Granted leave of absence for seven days. April 29, 1894. Granted leave of absence for twenty-three days. May 4, 1894.

BRATTON, W. D., Passed Assistant Surgeon. To report at Bureau, and then to proceed to Delaware Breakwater Quarantine for duty. May 19, 1894.

MAGRUDER, G. M., Passed Assistant Surgeon. To proceed to Key West Quarantine Station for duty. May 15, 1894.

KINYOUN, J. J., Passed Assistant Surgeon. To proceed to Wilmington, Del., for special temporary duty. April 26, 1894. Detailed as chairman Board for Physical Examination Officer Revenue-Marine Service. April 30, 1894. Detailed to attend annual meeting State Board of Health of North Carolina. May 11, 1894. To inspect property at Wilmington, N. C. May 14, 1894.

WOODWARD, R. M., Passed Assistant Surgeon. To proceed to Chicago, Ill., for special duty. May 7, 1894.

VAUGHAN, G. T., Passed Assistant Surgeon. Detailed as recorder Board for Physical Examination Officer Revenue-Marine Service. April 30, 1894.

STONER, J. B., Passed Assistant Surgeon. To inspect quarantine ports. April 26, 1894.

PERRY, J. C., Passed Assistant Surgeon. To assume command of service at Norfolk, Va. May 4, 1894.

YOUNG, G. B., Assistant Surgeon. To proceed to Key West, Fla., for duty. May 15, 1894.

BROWN, B. W., Assistant Surgeon. To proceed to Pittsburgh, Pa., for duty. April 27, 1894.

ROSENAU, M. J., Assistant Surgeon. To proceed to Boston, Mass., for duty. April 23, 1894.

COFER, L. E., Assistant Surgeon. To proceed to San Diego, Cal., as inspector, and to assume command of the service after June 30th. April 26, 1894.

EAGER, J. M., Assistant Surgeon. To proceed to New Orleans, La., for duty. May 16, 1894.

NYDEGGER, J. A., Assistant Surgeon. To proceed to Savannah, Ga., for duty. April 28, 1894.

STRAYER, EDGAR, Assistant Surgeon. To report for duty on Revenue Bark Chase. April 28, 1894.

OAKLEY, J. H., Assistant Surgeon. To rejoin station, San Francisco, Cal. May 16, 1894.

Promotions.

Assistant Surgeon G. B. YOUNG, commissioned as Passed Assistant Surgeon. May 25, 1894.

Assistant Surgeon W. G. STIMPSON, commissioned as Passed Assistant Surgeon. May 25, 1894.

Appointments.

ARTHUR R. THOMAS, of Illinois, commissioned as Assistant Surgeon. May 25, 1894.

HENRY W. WICKES, of Maryland, commissioned as Assistant Surgeon. May 25, 1894.

HUGH S. CUMMING, of Virginia, commissioned as Assistant Surgeon. May 25, 1894.

Society Meetings for the Coming Week:

MONDAY, *June 11th:* New York Academy of Medicine (Section in General Surgery); Alumni Association of the College of Physicians and Surgeons, New York (annual); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

TUESDAY, *June 12th:* New York Academy of Medicine (Section in Genito-urinary Surgery); Delaware State Medical Society (first day—Lewes); Massachusetts Medical Society (first day—Boston); New York Medical Union (private); Kings County, N. Y., Medical Association; Medical Societies of the Counties of Chemung (annual—Elmira), Chenango (semi-annual), Delaware (annual), Erie (semi-annual—Buffalo), Genesee (annual—Batavia), Livingston (annual), Onondaga (annual—Syracuse), Oswego (annual—Mexico), Rensselaer, St. Lawrence (semi-annual), Schenectady (semi-annual—Schenectady), Steuben (annual—Bath), Warren (annual—Lake George), and Wyoming (Warsaw), N. Y.; Newark, N. J., and Trenton, N. J. (private), Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Baltimore Gynæcological and Obstetrical Society; Practitioners' Club, Richmond, Ky.

WEDNESDAY, *June 13th:* Kentucky State Medical Society (first day—Shelbyville); South Dakota State Medical Society (first day—Huron); Maine Medical Association (first day—Portland); Delaware State Medical Society (second day); Massachusetts Medical Society (second day); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Metropolitan Medical Society, New York (private); Medical Societies of the Counties of Albany, Cortlandt (annual), Dutchess (semi-annual—Poughkeepsie), and Montgomery (annual—Fonda), N. Y.; Philadelphia County Medical Society; Middlesex, N. J., County Medical Society (annual).

THURSDAY, *June 14th:* Kentucky State Medical Society (second day); South Dakota State Medical Society (second day); Maine Medical Association (second day); New York Academy of Medicine (Section in Pædiatrics); Society of Medical Jurisprudence and State Medicine, New York; New York Laryngological Society; Medical Society of the County of Cayuga (annual); Brooklyn Pathological Society; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

FRIDAY, *June 15th:* South Dakota State Medical Society (third day); Maine Medical Association (third day); New York Academy of Medicine (Section in Orthopædic Surgery); Baltimore Clinical Society; Chicago Gynæcological Society.

SATURDAY, *June 16th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Obituaries.

SAMUEL T. HUBBARD, M. D.

DR. HUBBARD died at his home, No. 27 West Ninth Street, on Friday afternoon. He was born in 1808. He received his early education at the Garfield High School, Middletown, Conn., and at the Suffield Academy. In 1832 he began the study of medicine in New York in the office of Dr. Miller, a well-known physician of the time. He was graduated from the College of Physicians and Surgeons in 1835. Dr. Hubbard was always interested in all that pertained to the welfare and elevation of the profession. He became a member of the Medical Society of the County of New York in 1839, and was its president in 1866.

In 1844 he was elected a member of the Society for the Relief of the Widows and Orphans of Medical Men, and to this organization he always gave the assistance of his counsel and aided it with much needed financial support. He was one of the original members, of which only six survive, of the Academy of Medicine, founded in 1847; its secretary from 1853 to 1858; a trustee from 1859 to 1863, and again from 1872 to 1885, and a vice-president from 1873 to 1876. As one of the committee on ways and means, appointed in 1866, he was most active in raising funds, and the acquisition of the permanent home for the Academy in Thirty-first Street was very largely due to his personal efforts. He was attending and subsequently consulting physician to the Presbyterian Hospital. He was also a member of the New York County Medical Association and the Physicians' Mutual Aid Association. He was an active member of the New England Society.

As one of the typical family physicians for a long period of years, Dr. Hubbard was respected for his medical ability and loved for his kindness to the members of his profession, and his counsel was sought for in all the measures for the honor and dignity of the profession. His wise counsel had much to do with the shaping of the policy of the College of Physicians and Surgeons, of which for many years he was one of the trustees. In private life he was a warm friend, in his family a devoted husband and father, in public affairs honorable and dignified, enjoying the respect of all who came in contact with him. He was a good and true man.

Letters to the Editor.

INDECENCY IN PHOTOGRAPHY.

BALTIMORE, *June 1, 1894.*

To the Editor of the New York Medical Journal:

SIR: Whether photographic illustrations of anatomical and surgical phenomena exhibited by the human body convey as clear and instructive ideas of the conditions worthy of attention as may be conveyed by outline illustrations and drawings may well be doubted.

Photographs of the human tissues are apt to be lacking in "relief" as concerns important points in the field, and so to be confusing. But if photographs of the human body and tissues are to be employed, does not decency require that, even in medical publications, the scope of the photograph should be confined to the parts in which the phenomenon noted occurs; that the rest of the body, being unnecessary to the demonstration, be left out of the field, or be suitably covered up?

This plea is based, not on grounds of morality, but upon that sentiment which is ingrained in all truly refined characters, which medical education and practice need not obscure, the sentiment which is called "decency." Necessary exposure of the human body to the gaze of the physician and surgeon is not incompatible with this sentiment; but the element of necessity must always be kept in view. Modern obstetrics, for example, teaches that the safety of the patient demands free exposure of the obstetric region; but it demands that other regions be kept properly covered. Modern gynæcology gives the same right and exacts the same limitations. Are not physicians and surgeons guilty of indecency, if in photography they transgress these limitations? Is it not time that protest should be entered in the medical press and by medical men against ruthless license in such photographic illustrations?

There is a personal flavor about the photograph which is absent in the drawing or the outline, since in these latter forms of representation only the regions necessary to explanation of the facts described need be faithful to the model. Each of these photographic illustrations, however, with which modern articles on obstetrics and gynæcology abound represents some particular woman who has been photographed (we may well believe, while unconscious under anæsthesia and without the consent of herself or her friends) while placed in the humiliating back or knee-elbow position, which might just as well be described in words or in outlines, for the performance of an examination or operation which in many cases could be better explained by a careful use of the English language and by diagrams. In many of the most repulsive photographic illustrations we can, after careful study, find absolutely no point in which they throw valuable light on the printed description.

The question arises, even in the most generous mind, Is this indecent exhibition not prompted by a desire of the operator to advertise himself and his school, especially when he includes his antiseptic furniture and his own features? If this is the motive, is it not time to call a halt? Have not the profession a right to object, and to object loudly and persistently, against such unnecessary liberties with patients whom they have recommended to the care of the operator? Even in dealing with poor and friendless patients, is it desirable that the surgeon who aspires to greatness should violate the natural instincts of civilized man?

My plea is on behalf of decency. I have taken the lowest possible ground of controversy; but is there not a meanness in thus taking unnecessary liberties with the unconscious patient who has confided herself to one's professional care? Is there not indication here of a lack of moral tone which is unworthy of teachers in institutions of good repute called to form the characters of future physicians? MEDICUS.

Proceedings of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Third Triennial Meeting, held in Washington on Tuesday, Wednesday, Thursday, and Friday, May 29, 30, and 31, and June 1, 1894.

The President, Dr. ALFRED L. LOOMIS, of New York, in the Chair.

(*Continued from page 694.*)

Chemical, Physical, and Bacteriological Studies upon Air over Decomposing Substances, with Special Reference to their Application to the Air of Sewers, was the title of a paper with which Dr. ALEXANDER C. ABBOTT, of Philadelphia, opened a general discussion of the subject of *Sewer Gas* in the first part of the second day's session, which was under the direction of the American Climatological Association. Dr. Abbott said that under ordinary circumstances the difference between the chemical composition of the air from sewers and that of the atmosphere outside was very slight, and that, contrary to general opinion, there were comparatively few bacteria. It was also very commonly but erroneously supposed that sewer gas was under very decided pressure. Professor Chandler had collected abundant evidence to the contrary. There was, moreover, not a single conclusive demonstration that the air of sewers stood in an ætiological relation to many diseases for which it was popularly supposed to be accountable. The fact that the air in sewers was not under pressure, as a result of decomposition of the sewage, together with the fact that sewers were far from being air-tight, showed that the air of sewers was not likely to be driven out of the sewers under any great pressure.

But little was known as yet regarding the nature of the bacteria found in the air of sewers. Experiments had been made at the laboratory under his direction with a view to determining the effect of the breaking of gas bubbles on the conveyance of micro-organisms through the air. After endeavoring to simulate the natural conditions, it was found that such bubbling had but little influence of this kind. Bubbling was not a frequent condition in sewers, and, even should it occur, it was hardly conceivable that this would result in the transfer of micro-organisms from the sewer through the various branches and pipes leading to the houses. Then, again, if many pathogenic bacteria were present in the air from the sewers, those who worked in the sewers would show it in the effect on their health.

The Effect of Sewer Gas on the Production of Disease was the title of the next paper, by Dr. ABRAHAM JACOBI, of New York. The atmosphere, he said, was a favorable medium for germs. They tended, however, to fall to a low level, and hence might often be breathed by little children when taller persons would escape them altogether. The force of evaporation was not sufficient to lift the smallest micro-organisms from a moist surface, and consequently they could only gain access to houses by the action of an exceedingly strong draft of air, and not usually then.

Dr. Andrew H. Smith had told him of an interesting series of cases of amygdalitis which had occurred in St. Luke's Hospital, New York, and had been promptly arrested on the substitution of an iron pipe for a defective brick sewer. Another series of observations of great importance had been undertaken under the direction of Dr. Hermann M. Biggs, of the New York City Board of Health. A thousand cases of pseudo-diphtheria occurring in New York from August 1, 1893, to April 1st of the present year had been carefully mapped out and studied, and it had been found that the spread of affections of the throat, especially diphtheria, was not at all related to a defective condition of the sewers. Diarrhœal disease had not been diminished by improvement in the construction of the sewers. The large number of cases of typhoid fever occurring in New York city every fall were explained, in his opinion, by large importations of the disease with the annual return of the people from the summer resorts.

The speaker then reported a case which he believed illustrated the occurrence of direct cesspool poisoning. He stated also that he had seen typhoid fever and outbreaks of dysentery occur in tenements where the water-closets were not in proper condition. Of all the medical testimony on the subject under discussion, perhaps the best was that given by Dr. Louis Fischer, in an article published in the *Medical Record* for January 28, 1893. Dr. Fischer had endeavored to show that diphtheria sometimes spread from floor to floor in tenements, following the line of the waste-pipes, and wholly avoiding families living on the opposite side of the house. In about thirty per cent. of his cases, pathogenic bacteria were found. This, however, only proved that such germs were ubiquitous. Of the specific germs, those of typhoid fever and dysentery appeared to be the least easily destroyed of all the micro-organisms found in sewers.

Sewer Gas as a Cause of Throat Disease.—Dr. Beverley Robinson, of New York, continued the discussion with a paper thus entitled. He thought it was a demonstrated fact that persons ill with diphtheria became more severely ill if compelled to inhale the air from sewers continually. In his opinion, if a person with catarrh of the throat and a tendency to inflammation of these parts was exposed to sewer gas, he would be liable to have an attack of inflammation. This he had seen time and again.

The house physician of the Willard Parker Hospital had recently informed him that, notwithstanding the large number of cases of diphtheria in that hospital, they had not been able to find the Loeffler bacilli in the air about the patients. It had recently been shown that many of the children in the Hospital for the Ruptured and Crippled had been going around the wards with the Loeffler bacilli in their throats, without showing any symptoms of diphtheria.

Dr. William H. Welch, of Baltimore, said that he had been agreeably surprised at the valuable additions which had been made to our knowledge of this vague subject by the present discussion. This was particularly true of the observations of Dr. Abbott and the statements made concerning the investigations of the New York Board of Health. The latter observations seemed to show that even diphtheria had no connection with the emanations from sewers. This left but little except the very vague and nameless condition ordinarily referred to by physicians as "sewer-gas poisoning."

The Distribution and Control of Leprosy in North America.—The second half of the session was devoted to a discussion on *Leprosy*, and was in charge of the American Dermatological Association. Dr. J. Nevins Hyde, of Chicago, opened the discussion. He said the fact that leprosy had not spread over the United States was due chiefly to the excellent habits of our people. It was far more prevalent in the southern portion of the hemisphere. The United States enjoyed the unenviable distinction of allowing its lepers to go whither they would in Pullman cars over the whole length and breadth of the country. The American Dermatological Association had been the first to take steps toward securing statistics regarding leprosy in the United States. It was calculated that there were very nearly a hundred lepers in this country at the present time. These facts should call forth an earnest discussion, and lead to provision both for the leper and for the people in general.

The Distribution and Control of Leprosy in North America.—Dr. James C. White, of Boston, continuing the discussion, said that the history of its introduction and extraordinarily rapid spread in the Hawaiian Islands could only be explained by infection from person to person. It was very difficult to prove its direct communicability, as its period of incubation might vary from two to ten years. The well-known case of Father Damien was alone sufficient evidence of its contagious nature. It was a disease bearing a striking resemblance to syphilis and tuberculosis. In past ages the leper had been so rigorously isolated, and the disease in this way checked, that both physicians and the laity had come to doubt if leprosy were really contagious. The discovery by Nansen of the *Bacillus lepræ* demonstrated its contagious character as clearly as the discovery of Koch proved the same proposition in regard to tuberculosis. The bacillus of leprosy was found in great abundance in the blood and widely scattered throughout the organs and secretions of the body. In Norway and Sweden there had at one time been no restrictive regulations regarding lepers, but the government had at last changed its policy in this matter, and as the result of such legislation the number of cases of leprosy had been reduced in Norway from 2,607 in 1870 to 800 in 1893.

In conclusion, the author recommended that every physician should be compelled to report every case of leprosy to the nearest board of health; that immigrant lepers should be prevented from entering this country; and that graded hospitals should be established by the national government for the proper care and isolation of lepers.

Dr. George H. Fox, of New York, said that, although leprosy must be considered as communicable, the danger of infection of those associating with lepers was extremely slight For over a generation there had been cases of leprosy in New York State, both inside and outside of hospitals, and yet no case of direct infection had been observed. In his opinion, a case of syphilis was a hundredfold more liable to spread disease through a community than a case of leprosy. He could recall the case of a college professor who, instead of being the unhappy creature that a leper was usually pictured to be, had been able to carry on his work, and that too without many discovering even the existence of the disease. A leper was no more a menace to the public health than the victim of pulmonary tuberculosis. It seemed to him inconsistent to demand legislative protection against lepers because they were few, while we went on allowing syphilitics and consumptives to increase and multiply in every part of our country.

Dr. Joseph D. Bryant, of New York, said that enough was already known of leprosy and of its victims to justify the taking of prompt steps for its extermination. If this disease should smite this country as it had smitten the Old World in the eleventh century, then indeed would abject fear take the place of pity and dread. At present lepers were really outcasts, and were subjected both to public and private persecution, and hence national legislation to insure segregation of lepers was certainly humane from every point of view.

Dr. Walter C. Wyman, of the Marine-Hospital Service, spoke of past and present legislation affecting lepers in this country, and showed that by such restrictions the entrance of these dangerous individuals had been prevented. He also pointed out the difficulties in the way of further legislation, and the probable line of action which would be followed by those who desired to see lepers placed under national control.

Dr. A. Van Harlingen, of Philadelphia, in the course of a few brief remarks on the diagnosis of the affection, stated that he understood that, as a result of the failure of our examiners to detect some of the very early manifestations of leprosy, a large number of lepers from Norway had gained entrance to this country. The most important factor in the treatment was segregation.

(*To be continued.*)

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

SURGICAL SECTION.

Meeting of April 13, 1894.

Dr. John B. Roberts in the Chair.

A Radical Operation for Congenital Hydrocele in an Adult.—Dr. Thomas S. K. Morton presented a man, aged twenty years, upon whom he had operated six weeks previously for congenital hydrocele of the tunica vaginalis testis. Incision and ligature of the neck of the sac, with subsequent packing with iodoform gauze, had been the method of treatment adopted.

The symptoms were a large fluid distention of the right tunica vaginalis, pain and sense of weight, the disappearance of the fluid during the night and upon prolonged pressure of the scrotum, together with profound melancholy incident to the patient considering himself subject to serious disease of the sexual apparatus.

He had been etherized, and a four-inch incision had been made in the scrotum and sac. A probe could then be passed upward through the patulous but very small calibered unobliterated funicular process into the abdominal cavity. A curved needle armed with strong chromicized catgut had been passed through the tissues surrounding this sinus beneath the tunic, avoiding the vas deferens and spermatic vessels, and brought out at the point of entrance. When the ligature had been tied down tight, an effectual approximation of the neck of the sac at the external ring had been secured, and all communication with the peritoneal cavity cut off. The sac had then been carefully searched for fibrous or other bodies; none being found, the cavity of the tunic had been lightly stuffed with iodoform gauze after its edges had been sewed to the skin margins of the wound by a continuous suture.

The packing had been renewed every two days. In five days he had been able to get up, and at the end of ten days had returned to work, wearing simply a pad of bichloride cotton held in place by a suspensory bandage. The wound had finally closed, under stimulation by twenty grains of nitrate-of-silver solution, within three weeks. The result, as demonstrated by the patient to the section, had been perfect, and the man had returned also to a normal mental condition.

Pickaxe Wound of the Brain.—The chairman presented a patient who had recovered from a pickaxe wound of the brain, and said that the man had been brought to him at the Polyclinic Hospital with a small wound of the skull through which the brain substance oozed. He had been struck with a pickaxe shortly before admission to the hospital. Within an hour and a half after the injury he had laid open the skull, and had found pieces of bones driven into the brain. He used the mallet and chisel to cut away the edge of the fracture, and with a forceps removed the fragments of bone from the brain tissue. His finger passed nearly an inch down into the brain structure, which was soft. He had then washed away, with a stream of bichloride solution, the soft brain tissue. As there had been a good deal of oozing from the pia he had stuffed a small piece of gauze into the wound to make a little pressure, sewed up the scalp wound at the ends, but allowed the gauze to stick out at the center. The wound had united by first intention where the edges had been sewed together; and by second intention where the wound had been kept open by the gauze, which had been removed at the end of twenty-four hours. At the present time the wound was healed and the man was well. The pulsation of the brain could be seen where the bony wall was absent. It was four weeks since the accident had occurred. If trephining had not been done Dr. Roberts believed the man would have died of cerebral abscess.

A Misplaced Testicle restored to its Proper Position.—Dr. Edward Martin presented a case of misplaced testicle in a boy aged nine years. He had the testicle normally descended on the left side, but on the right side it had gone into the perinæum, lying an inch in front of the anus. It was freely movable and normal in size. The difficulty, of course, had been that from its false position the gland had been exposed to traumatism. The boy had already suffered from one attack of acute orchitis. The history of these cases of misplaced testicle showed that the gland was at first entirely normal in structure and development; but that it finally, simply from chronic inflammation incident to repeated slight injuries and atrophies, had become useless; hence the great importance of shifting the still normal testicle to its proper protected position.

The only method to be considered in this case had been a free incision, division of adhesions, and replacement. The testicle had been cut down upon. The cord had been dissected free; some dense fibrous bands passing backward toward the anus and adherent to the epididymis had been cut, an opening had been made in the tissue of the scrotum, and the testicle had been secured in its proper position by two stitches passing through the lower part of the vaginal tunic and the inner skin surface of the base of the scrotum. The long wound had been united in a cross direction, thus deepening the scrotal sac. The wound had healed without suppuration, and the testicle lay in a perfectly normal position.

The boy was now perfectly well and able to ride a bicycle without discomfort.

Paralysis of Bell's Long Respiratory Nerve.—Dr. Martin reported a case of paralysis of the long respiratory nerve following typhoid fever. During the fourth week of convalescence from typhoid fever it had been noticed that the angle of the right scapula had become very prominent. This had been diagnosticated as a dislocation of the scapula—that is, a slipping of the lower angle of the scapula over the fibers of the latissimus dorsi muscle.

On examination it had been at once apparent that the serratus magnus had been palsied. In addition to its respiratory function the serratus magnus was directly concerned in the movements of the shoulder. By its tonic contraction it held the scapula, especially its lower angle, closely applied to the chest, and when thrown into full action rocked this bone outward, thus enabling the arm to be carried upward. The deltoid could lift the arm out and up till it was held at right angles to the long axis of the body; the rocking of the scapula by the serratus carried the arm up. Inability to raise the arm higher than the shoulder had been well marked in this case. Under treatment by massage and electricity the patient had recovered in a great measure. He was not absolutely cured, but the outlook was good, as he believed it was in the majority of these cases of neuritis after typhoid fever. The photographs showed very perfectly both the disability and the wing-like projection of the shoulder blade.

Cured Fracture involving the Atlas and Axis.—Dr. M. H. Cryer presented a specimen of which he did not know the history, except that it had been found among a lot of bones when the Philadelphia Dental College had been removed to its present quarters. The atlas and axis were held together by bony union. The odontoid process was not in its normal position, but nearly in the center of the spinal canal of the atlas. From this it would be judged that in the displacement of these bones the transverse ligament had been torn and the patient had lived at least long enough for bony union to take place, although the spinal cord must have been impinged upon to a very great extent.

Non-recurrence of Malignant Mammary Disease after Eighteen Years.—Dr. Thomas G. Morton presented a patient, fifty-six years of age, from whom, eighteen years before, he had removed the right breast for malignant disease; the tumor, a rapidly growing one, had been large and had the usual characteristic symptoms. Since the operation, the patient had had no return of the disease, and continued in excellent health.

(*To be concluded.*)

Reports on the Progress of Medicine.

PRACTICAL HYGIENE AND SANITARY SCIENCE.

By CHARLES G. CURRIER, M. D.

The Model Tenement Houses of London.—The twenty-ninth *Annual Report of the Trustees of the Peabody Donation Fund* shows that on December 31, 1893, there were 19,937 persons of the laboring and artisan class of the London poor resident in 11,273 rooms comprising the 5,070 separate dwellings resulting from the wise management of the very successful and prosperous trust founded by the great Massachusetts philanthropist. These dwellings were arranged so that there were 804 of one room, 2,404 of two rooms, 1,787 of three rooms, and 75 of four rooms. The weekly rent of each ranged from two shillings to seven shillings and sixpence, the average rent of each dwelling being 4*s.* 9¼*d.* a week, and of each room 2*s.* 1¾*d.* This always includes the free use of water, laundries, sculleries, and bathrooms. Like tenements managed by Miss Octavia Hill, as also the various other British improved dwellings for the poor, the Peabody buildings—of which two more blocks, yielding 110 rooms, are at present building in London—should be studied by philanthropists contemplating similar and much-needed hygienic improvements in our cities. While the Peabody tenants are admittedly superior to the average of their class, it is yet of interest to note that the yearly birth-rate among them reached 35·1 in a 1,000 in 1893, being 4·1 in a 1,000 above that of the entire metropolis. The death-rate (including 65 deaths among tenants removed to hospitals) was 17·6 in a 1,000, which is 3·7 below the average of all London for the same period.

The Perils of Football.—In the *Lancet*, March 24, 1894, pp. 764 to 767, is a list of a portion of the accidents occurring in England from October, 1893, to March 20, 1894. Ten deaths are recorded. The different British football games are considered. It concludes that (1) football is dangerous; (2) contemporary changes have in some respects increased, in some respects lessened, the dangers; (3) probably no modification in the laws (so as to arrest the dangers) would leave the game as good a one as it now is from the athletic point of view. A drastic code is advised, favoring a sweeping and inclusive definition of that growing evil, "professionalism."

Flies as Bearers of Infection (*Wiener klin. Woch.*, March 22, 1894, p. 211).—All observant travelers in Egypt notice an immense amount of eye disease. Blind people abound, and all grades of trachoma and the results of communicable ophthalmia are exceedingly common; from August to November acute ophthalmia is most prevalent. In the conjunctival discharge both gonococci and bacilli occur, occasionally together in the same case. When the bacilli alone are present, the disease is of a milder kind. Besides the familiar causes—extreme filthiness and direct specific contact—an apparent means of dissemination of the disease is found in the myriads of *flies* which infest Egypt. These remain undisturbed upon the eyelids of children, feeding upon the conjunctival discharge, according to Fuchs, and then transmit the infection further, especially in the warm weather. Lucian Howe found that if such flies were allowed to walk over the surface of nutrient gelatin, bacteria developed wherever their feet had gone. Hirschberg and some other physicians doubt that the flies are in any way the carriers of the infection. Yet the Bedouins of the desert regions, where there are comparatively very few flies, present a smaller proportion of eye diseases.

Sunlight as a Disinfectant is studied by E. von Esmarch in *Zeitschrift für Hygiene*, etc., xvi, ii (1894), p. 257. The general value of sunlight in this regard has been extensively assumed and advised for disinfecting leather, delicate furniture coverings, furs, etc. Boubnoff has shown (*Archiv f. Hygiene*, x, p. 335) that the recognized beneficent action is not simply superficial, but that its chemically potent rays can exercise an influence quite through a fabric of ordinary thickness. Cholera germs, even on and in deeper layers of tissues experimented with, die very promptly under the influence of sunlight, none surviving for an hour. This is explained by the familiar fact that mere drying is sufficient to kill these. Esmarch found that dark fabrics prevented the bactericidal action of the sun's rays upon infected fabrics underneath much more than did light-colored cloth. So the sun's warmth could not have been a very important factor in producing the results obtained. It was found that even the simplest linen covering, upon cushions and pillows, protects from destruction such disease germs as are not sensitive to drying. Although, in one of the several experiments with diphtheria bacilli, an exposure to sunlight for five hours killed all of the bacilli to the depth of three thicknesses of cloth (infected from cultures), in other cases twenty hours (of sunlight on successive days) did not suffice to kill them when inside of cushions or pillows. In the depths of the wool of a sheepskin thirty-nine hours of actual unclouded sunshine failed to destroy the vitality of the bacilli of diphtheria. For mattresses, cushioned furniture, etc., the unaided influence of sunlight is unreliable where disinfection is absolutely necessary. Steaming is to be employed, if practicable, as being by far the best means. Otherwise, a liberal use of a five-per-cent. solution of carbolic acid is needed. Esmarch concludes that mere sunlight in our latitude affords only an unsatisfactory and usually quite inadequate means of disinfecting infected objects, with the probable exception of articles from cholera cases, as above indicated. Other observers are not disposed to accept these results. Karlinski, an expert bacteriologist (*Wiener med. Woch.*, Feb. 17, 1894), escorted a band of pilgrims and made a number of interesting observations in connection with two hundred and ninety-two examinations of cholera dejecta. The vibrio (comma bacillus) was at times very difficult of recognition and was in a few cases present without causing cholera symptoms. While at El Tor, he made a few experiments and reached the conclusion that the sun exerted an important influence as a disinfector, and that not merely because of its warmth and drying power.

Practical Disinfection of Infected Railway Cars.—Petri and others (*Arbeiten a. d. kais. Gesundheitsamte*, ix, i, p. 111) inoculated one hundred and seventeen guinea-pigs with car dust. After from four to six weeks all of these animals then living were killed and examined for tuberculosis. Three positive cases of the disease were found among all these animals thus treated. These three cases came in the guinea-pigs after they were inoculated with the dust from two sleeping cars. Of the other one hundred and fourteen, infectious diseases killed forty-five, as follows: Twenty-seven died from peritonitis, fourteen from malignant œdema, two from abscess of the liver, one from abscess of the abdominal wall, and one from tetanus. Floors of cars were examined three hundred and eighty-three times, and 42·6 per cent. of these were found to have sputa present in notable amount. From thirty-four of the worst soiled, ninety-one guinea-pigs were inoculated. Of these, 30·8 per cent. died in consequence. The remaining sixty-three animals were killed in six weeks. All were healthy except three, which were found to have acquired tuberculosis. Among the seven kinds of bacteria found in the sixty-three guinea-pigs (killed), the pyogenic staphylococcus and streptococcus were the most conspicuous For disinfecting cushioned, carpeted, and otherwise upholstered cars, steaming is the only absolutely reliable method. For wooden seats, box cars, and woodwork in general, washing and scrubbing with brush and warm two-and-a-half-per-cent. solution of soft soap, and subsequent rubbing dry, reduced the number of bacteria present to less than one per cent. of their original amount. A stream of water from a hose, as also a spray or sprinkled jet of water, did not remove more than seventy per cent. of the bacteria present. Subsequent rubbing cleansed much more effectively. A 1-to-1,000 solution of corrosive sublimate, soaking the wood for four minutes, destroyed nineteen twentieths of the bacteria, but not the tubercle bacilli. Fresh oil paint applied over an old painted, infected wood surface, left it sterile.

The Practical Management of Gravity Sand Filters is discussed by Piefke, engineer of the Berlin Waterworks (*Zeitschrift für Hygiene*, February, 1894, p. 151). When many green algæ are in the unfiltered water, they quickly obstruct the flow and necessitate cleansing of the surface before forty cubic feet of water have passed through each square foot of sand surface. Tests of both filtered and unfiltered water by means of the gelatin-plate method should be made once daily. It is best that every filter bed be separately tested. The fairest time to do this is after a filter has been working steadily for some hours. The pressure must not exceed four feet of water above sand surface. The velocity of flow should not exceed four inches an hour. The filter is apt to work defectively—

1. If there is no adequate provision for accurately regulating the flow. (Irregular flow prevents good results.)
2. If there is too high pressure.
3. If the fine sand layer on top is not kept thick enough.
4. If sedimental coating (to secure mechanical holding back of bacteria) is lacking.

Silt affords an excellent sediment for filter beds. Iron oxyhydrate comes next, and is more efficient than algæ. When algæ are relied upon for this film-formation they settle more promptly if abundant light is furnished.

A formula of efficiency (E) is given:

$$E = \frac{R}{v_m \times p_m}$$

where v_m = mean velocity; p_m = mean pressure. R = retentive capacity of the upper layer of the filter bed. This element (R) is much weakened just after a cleansing of the surface. Hence the velocity must be very small at the beginning of use after cleansing. Later, it can be increased. With the strengthening of R the pressure can be increased, yet not very much. It is important to note that the quality of the element R necessarily varies with the locality, because of the varying character of the sedimental constituents of the unfiltered water.

Sewage Disposal is a problem of growing importance. Sewage farms are unprofitable unless under very favorable conditions. The *Sanitary Record* (March 3, 1894) illustrates this by citing the admirably conducted Birmingham (England) farm of four hundred acres which is carried on at a yearly loss of £30,000. Two fifths of this loss is on the working of the farm and three fifths represents interest on the capital invested. The two special causes of this unprofitableness are: 1. The necessity of using eleven tons of lime daily to neutralize the unusual acidity of the sewage. 2. There is insufficient fall for the sewage. Hence settling tanks and dredges have to be provided. Sewage purification by chemical precipitation is carried on in Worcester, Mass., on a larger scale than anywhere else in this country. The city engineer's report shows that the peculiar situation makes this process desirable although rather costly. Since the sewage intermittingly contains much iron in an acid solution, that is utilized instead of alum. To each million gallons of sewage about one thousand pounds of lime are also added. About half of the total volatile residue and of the albuminoid ammonia are removed by the treatment, which also lessens the bacteria by ninety-three per cent. The embarrassing question of the utilization of the sludge is not settled. Here, as in Europe, farmers are loath to employ it as manure, for it has only half the fertilizing value of horse manure. Cremation of sludge is effectual, as was demonstrated at the Columbian Fair. The "electrozone" method of purifying sewage or sewage-contaminated water consists in the addition of common salt (if enough is not already present), and then liberating chlorine from this solution by the use of an electric current. It is simply a proprietary method, and apparently a rather expensive one, of producing a solution of sodium hypochlorite (chlorinated soda). In the (preliminary) *Report of the New York City Health Department* for 1892, published in the *City Record Supplement* of February 3, 1894, there are given (on page 35) the reports of several experiments which serve to corroborate the previous observations of various European biologists and of Dr. Duggan (see the 1885 *Report of the American Public Health Association*) to the effect that chlorinated soda and chlorinated lime are valuable disinfectants by reason of their active chlorine. For the privilege of using this proprietary process, or the similar European one known as the Hermite process, the mere royalty charged appears to amount to as much as the necessary amount of fresh sodium or calcium salts of hypochlorous acid. Of these, chlorinated lime is to be preferred in most cases if the following is corroborated by further tests. It will be interesting to observe the results at Danbury, Conn., where, according to the *Engineering News*, the proprietary method is to be tried. Chlorinated lime is said by Traube (*Zeitschrift für Hygiene*, etc., February 8, 1894) to kill within two hours all micro-organisms in, for instance, one wine quart (litre) of water (containing many bacteria), if to this amount of the unwholesome water 0·00426 gramme of the fresh calcium salt is added, containing 0·001065 gramme of available chlorine. Less than ten per cent. of the chlorine was used up in the experiments. To neutralize the unused chloride of lime the subsequent addition of 0·00209 gramme of sulphite of sodium (as an efficient "antichlorine") is therefore advisable after the chlorine compound has done its work. An excess of fifty per cent. of this sodium sulphite is not objectionable, for within fourteen hours the excess is oxidized by the free oxygen of the water to wholly indifferent sodium salts. After this treatment the water is said to have an excellent taste, and it is rendered only about one (English) degree harder than before the calcium salt was added.

[If careful and repeated experiments with American sewage show that the small quantity of chemicals indicated in the preceding paragraph suffices to sterilize all disease germs and fæcal bacteria of sewage, the process is certainly to be recommended as quite inexpensive. According to Klein, of London, and Pfeiffer, of Wiesbaden, much larger quantities are needed. The reporter proposes to test the efficacy of these small amounts of chemicals upon the sewage of certain of our cities. The above figures require a trifle less than forty pounds of fresh chlorinated lime and nearly eighteen pounds of sodium sulphite for one million gallons of sewage! The bisulphite of sodium is the most available "antichlorine" sold here, and in barrels containing somewhat more than five hundred pounds sells in New York city for two cents and a half a pound. The same price is charged for the calcium salt ("English bleach") in casks. Small packages cost more by the pound.]

The Contamination of Well Water by Leakage from Privy Vaults, etc., can be detected—as is well known—by adding lithium salts to the contents of the vault and afterward testing neighboring wells, first evaporating a considerable quantity of the water and then employing the spectroscope. A much easier and quite reliable means is the careful addition of the approved disinfectant, saprol, to the vault, manure heap, or other suspected source of contamination (Noerdlinger, ref. in *Ges. Ingenieur*, April 30, 1894). The ordinary commercial article is used, containing forty per cent. of cresol. If contaminated from a vault to which this is added, water will soon betray the presence of this coal-tar product, for it is easy, by the sense of smell, to recognize one part of saprol in a million parts of water. To the sense of taste it is twice as evident. That is, the characteristic taste—reminding one of illuminating gas or naphthaline—is very marked when saprol is present in the proportion of only one part in two million parts of water.

A Rapid-culture Method for Recognizing Cholera Vibrios in Fæces is strongly recommended by Maasen (*Arbeiten aus d. kais. Gesundheitsamte*, 1894, p. 122). It consists in the use of tubes of sterile, coagulated blood serum. Small portions of shreds and of soft masses from the intestinal contents or dejections are (by a sterile looped wire, glass rod, or other means) spread out upon several of the serum surfaces. They are kept in a thermostat for from six to twelve hours. Cholera vibrios, if present, will then have caused erosions of the surface as though the coagulated serum had been gnawed out. In the depths of the holes and grooves the vibrios can be found in almost pure culture. This culture medium is advisable as a secondary (and confirmatory) test where the peptone-salt method has been used with suspected water. The serum method is preferable to the usual peptone-water method because (1) more disease matter can be used; (2) if the serum is fluidified within twenty-four hours the probability at least of the presence of cholera germs is great, even without a microscopic examination of the culture; (3) if the serum shows none of the above indicated change, no cholera germs are present; (4) within twenty-four hours other bacteria will not have developed so much as is the case where fluid culture media are used. A modified Uschinski culture method of rapidly detecting cholera vibrios is given in the *Centralblat für Bakteriologie* for April 7, 1894, p. 456.

Egg Albumin as a Culture Medium for Detecting Cholera Vibrios in from five to ten hours (of thermostat) is emphatically recommended by Zabolotny (*Deutsche Med. Woch.*, Dec. 21, 1893). This medium causes cholera colonies to develop with characteristic appearances similar to the typical colonies produced upon gelatin. To keep the coagulated albumin transparent, it is prepared with the addition of not much more than forty per cent. of water and sixty per cent. or less of a one-per-cent. solution of caustic potash or soda. For sterilization, a temperature several degrees below 212° F. is used. The details of preparation are to be found in *Biologisches Centralblatt*, 1888, pp. 307–311; also in late editions of Hueppe's text-book and in bacteriological journals for 1888. Freymuth and Lickfett recommend plate cultures made on a compound of agar (twelve parts), gelatin (thirty parts), glycerin (twelve parts), and Koch's bouillon (nine hundred parts). This develops colonies in six hours of thermostat (temperature, 98·5° F.). Another method of employing egg albumin for cultures is given by Wesener in *Centralblatt für allg. Pathologie*, January 31, 1894. The egg is shaken and boiled, and slices of the mixed albumin are used for cultures.

Surface Cultures of Typhoid, Cholera, and Other Disease Bacteria can be most successfully produced upon nutrient gelatin and other solid culture media by using a clean, sterilized camel's-hair brush for spreading the containing water, blood, or secretion. Thereby, according to Kruse (*Centralblatt für Bakteriologie*, etc., March 24, 1894) the usual distinctive, aerobic, surface colonies develop more promptly and certainly than when gelatin plates are prepared in the usual (or any other) manner.

Typhus Fever.—Dubief and Bruhl (in *Archives de médecine expérimentale*, etc., March 1, 1894, pp. 224–249) consider this as a disease whose chief lesions are located in the throat and respiratory tract. It is a localized infection whose toxic products invade the system and thus produce the stupor, dilatations of vessels, and other symptoms. In the lesions Dubief and Bruhl find a presumably causative diplococcus, developing best at a temperature of about 104° F., liquefying gelatin slowly, readily stained by aniline colors, and especially by Gram's method. It seems very resistant to drying, and can remain virulent for months when dried. It is not a *pus-producer.* It would appear that it is chiefly by means of expectorated products of this disease that the infection is diffused.

Typhoid Bacilli.—Various experts in America and Europe doubt whether these bacilli can be differentiated from certain other varieties that are harmless although they very closely resemble the genuine ones. Yet new tests, considered absolutely reliable and conclusive by their originators, are announced every few months. Schild (*Zeitschrift für Hygiene*, etc., March 2, 1894, p. 378) strongly recommends the addition of $\frac{1}{7000}$ part of formalin to culture bouillon (and gelatin) after sterilization. Formalin is a forty-per-cent. aqueous solution of formaldehyde. It is one of the newer proprietary disinfectants, is not very stable, and is decomposed by heat. Incorporated into the culture media in the proportion of one part of this to seven thousand of the bouillon (or gelatin), it prevents the growth of typhoid bacilli, allows water bacilli to grow slightly, and permits the *Bacterium coli commune* to flourish.

Typhoid Bacilli.—Germano and Maurea (ref. in *Centralblatt für Bakteriologie*, etc., Jan. 16, 1894) have studied these bacteria very fully. They recognize about thirty distinct varieties of typhoid-like bacilli that counterfeit the genuine more or less exactly, and several kinds of these may be found in the same fæcal matter. The term *Bacterium coli commune* likewise comprehends several varieties. These experimenters do not confirm the opinion of Rodet and Roux that other kinds of bacilli become converted into genuine typhoid bacilli. Nor do they agree with Babes that there are several varieties of typhoid bacilli. Yet they declare that the genuine ones may differ in luxuriance of growth and in degree of virulence. Germano and Maurea find that the potato test fails in certain regions and is therefore not of universal value. While seemingly unfamiliar with Dr. Th. Smith's adaptation of the Kühne fermentation tube (see *Wilder Quarter-Century Book*, 1893, pp. 225–233, and *Thirteenth New York State Board of Health Report*, 1893, p. 712) for studying the production of gas in bouillon cultures of bacteria, Germano and Maurea regard the evolution of gas in puncture cultures in agar that contains two per cent. of glucose) as absolutely proving the bacillus not to be typhoid. It is important to have control cultures of the genuine typhoid bacillus at hand for comparison whenever one is testing the character of a doubtful culture.

The Resistance of Typhoid Bacilli against Drying was tested by the late J. Uffelmann (*Centralblatt für Bakteriologie*, etc., Feb. 5, 1894). His results corroborate the general view that typhoid bacilli withstand drying for a month at least, and in some cases (in dirt, sand, cloth, etc.) they retain their vitality for several months. The possibility of their being carried by air currents and thus conveying infection is assumed, but neither German nor French experimenters who have worked upon this problem have adduced much evidence.

Hydrophobia.—In 1893, at the Pasteur Institute in Paris, there were treated 1,648 persons who had been bitten by rabid animals. Of these people four died unquestionably in spite of the treatment. The mortality, therefore, was at the rate of 2·4 in a thousand, being nearly the same as in 1891 and 1892. Among these were not included four other deaths, because the treatment was not completed. In 508 of the cases the bite was not unquestionably proved to have been that of a rabid animal. In 1,008 cases hydrophobia of the biting animal was confirmed by veterinary examination. In 132 cases hydrophobia was demonstrated by the development of the disease in untreated animals bitten by or experimentally inoculated with the medulla of the biting animal. Of the 1,648 people treated, 178 came from places outside of France; of these foreigners, one was from Brazil and one from the United States. (*Annales de l'Institut Pasteur*, March 25, 1894.)

Tuberculosis, and its dangerous communicability among human beings and animals, can no longer be said to be viewed with indifference by the laity, although most of our legislators are at present in favor of a parsimonious policy. Scientific cleanliness on the part of the human sufferers and their attendants is generally inculcated by physicians. That this teaching has produced good results may be inferred from the fact, recorded in the *Thirteenth Annual Report of the New York State Board of Health*, that in the entire State the proportion of deaths from *consumption* has almost constantly lessened from 1885, when, out of each 1,000 deaths, 139·76 were due to that disease, while in 1892 the number was 106·66.

Besides the publication of Dr. Salmon and Dr. Smith, in 1892, on *Diseases of Cattle and Cattle Feeding*, issued by the United States Bureau of Animal Industry, numerous articles have been circulated widely, especially among those having to do with cattle. Of the more recent, as presenting the essential facts in a simple form, are to be recommended the report by Dr. Bryce on Tuberculosis in Ontario (February, 1894), and *Bulletin* 65 of the Cornell University Agricultural Experiment Station (April, 1894), by Professor James Law (each fifty-one pages). Careful veterinary inspection of slaughtered animals in Europe and in various States of this country shows that less than one per cent. of cattle under one year of age have the disease. After the first year of life the proportion of infected animals increases rapidly. It is reported that upward of forty per cent. of slaughtered cattle over six years of age have tuberculosis. The respiratory organs and their glands are found to be affected in a much greater proportion than the intestines and other abdominal organs. In cattle, as among human beings, infection derived from milk seems insignificant compared with the vast amount of lung tuberculosis due to bacilli borne on dust and diffused through the air of crowded, ill-ventilated, and unclean buildings. In a mild climate, where there is little or no need of housing, there is only slight danger of the infection spreading, even though a case of tuberculosis be present in a herd. Steers that live almost altogether in the open air furnish only one sixtieth the proportion of cases that dairy cows do. The latter, however, have also to undergo the strain of parturition and prolonged lactation, and are thereby rendered somewhat more susceptible.

Skillful auscultation and other physical examination, together with a consideration of the general symptoms, such as cough, dry skin, wasting, etc., are of value in cases where the disease has made considerable progress. Yet beginning and latent cases require other tests. Of these, by far the most prompt and valuable is that afforded by the injection of *tuberculin.* A small amount of this will have no effect on a healthy horse, pig, or cow, yet four drops will stimulate into activity the tissues about any tubercles that are present, and, after from eight to fifteen hours, will then cause a notable rise of temperature (2·5° F.). While aggravating the activity of the tubercular process, however slight it may be, in an animal that already has the disease, the employment of tuberculin that is properly prepared is not appreciably harmful for healthy animals. Though objectionable for tuberculous animals that are to be kept alive, it is indispensable as a means of distinguishing very slight cases so that the disease may be absolutely stamped out of a herd.

Red flesh of tuberculous cattle is not apt to carry the infection. With pork from a tuberculous pig the danger is greater. The blood seems to be quite free from infecting bacilli. With regard to *milk*, expert opinions differ widely. Some hold that no danger of infection therefrom exists, provided the udder is not obviously diseased; others condemn milk from an animal that is distinctly tuberculous in any organ. The latter seems the safer opinion to be guided by, yet exceedingly few unquestionable cases can be adduced in support of it.

Cooking kills disease germs. None of the bacilli of tuberculosis remain alive in meat or milk exposed in *every part* to a temperature of 175° F. for more than ten minutes. Yet Professor Law urges that even then the food products coming from a tuberculous animal may contain enough tuberculin to be a source of harm to consumers who have tuberculosis, however slight. The danger seems at any rate quite a minor one.

Professor Law recommends very radical measures in the interest of public health and private welfare, and even as a means of eventual economy to the State.

Private slaughterhouses should be abolished.

Meats, whether fresh or salted and canned, that have not undergone proper government inspection and are not officially declared sound, are to be excluded.

Systematic, skilled inspection of dairy herds and slaughterhouses ought to be under a single administration, and the officials must be entirely independent of private influence.

All farm animals should be examined by skilled veterinarians.

Old and unthrifty milch cows and all suspected animals are to be isolated; likewise newly purchased cattle until inspected by an expert.

Every tuberculous animal should be killed, and then the carcass (and the manure) destroyed by heat or buried deep enough in a remote place.

No consumptive person should attend to any live stock or prepare their food. Rats, mice, and sparrows in a building where tuberculous animals have lived ought to be exterminated. The premises that have been occupied by tuberculous animals, and especially the articles with which they have been in contact, must be thoroughly disinfected. The results are most satisfactory when this is done at state expense. Illiberality on the part of the state in these matters and lack of thoroughness are poor economy.

Tuberculin and its Value as a Means of Diagnosis in Incipient Tuberculosis in Cattle is considered by Rievel (ref. in *Hyg. Rundschau*, Feb. 15, 1894). Six heifers were bought for experiment. Of these, three reacted to tuberculin injections, their temperatures being thereby raised by from 1·8° to 4·8° F. These three seemed tuberculous and were therefore slaughtered. Careful expert veterinary examination revealed in two of them acute bronchial catarrh, but neither tubercles nor bacilli. In the third heifer (not the one which showed the highest temperature) a few bacilli were demonstrated in tubercles found in the lymph glands. From these and another similar experience the inference is drawn that tuberculin is not uniformly reliable as an indicator.

Dr. Salmon, Chief of the United States Bureau of Animal Industry, in a letter of April 7th, says: "While the results may not be in every case infallible, it is far ahead of any other means of diagnosis. The number of errors which follow when tuberculin is judiciously used are not sufficient to prove a serious objection to its adoption." [Whoever wishes to study the subject of tuberculin and its exact action, especially as regards its non-action upon centrally situated tubercles, should read Arthur Klein's *Ursachen der Tuberculinwirkung* (Vienna, 1893).]

The Sediment of Centrifugal Separators is in some places utilized as food for swine, for it has considerable nutritive value. Ostertag (in *Zeitschrift für Fleisch- u. Milch-Hyg.*, Jg. iv, H. i) advises, however, that such filthy stuff ought to be sterilized if to be fed to swine, since the separating process carries into this sediment most of the *tubercle bacilli* that may be in the original milk.

Margarine ("oleo" or *artificial butter*) of pure quality is regarded as equal to genuine butter in digestibility and nutritive value. This view is further corroborated by the results of prolonged and thorough experiments reported at length in recent communications of the Vienna Imperial Academy of Sciences. For the experiments, only pure materials were used for the preparation of the margarine.

New Inventions, etc.

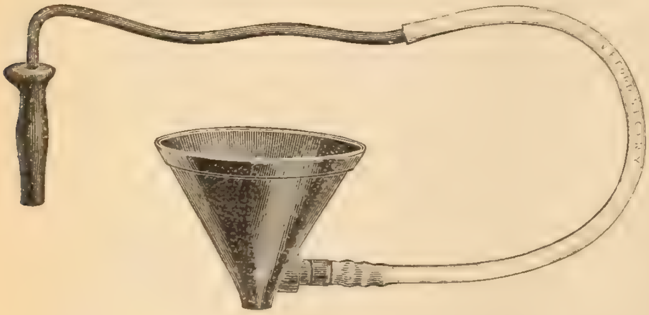
AN INSTRUMENT FOR EXCLUDING BLOOD FROM THE LARYNX DURING THROAT OR MOUTH OPERATIONS REQUIRING ANÆSTHESIA.

By Dwight L. Hubbard, M. D.

Every surgeon who has done severe operations upon the nose, pharynx, or mouth, requiring anæsthesia, knows that they are not without danger. Especially in operations in the pharyngeal vault the operator must work with great rapidity to prevent the blood from doing damage in the larynx and bronchi. This rapid work is not conducive to good results or to a clean operation.

The fact that many different positions of the patient are advised by as many different surgeons is of itself proof that blood in the larynx during these operations is feared. It has seemed to me that if this danger could be obviated, the operation could be done with much greater ease than it is generally done, and the chief danger avoided.

During several years of operating on these cases I have never attempted one under anæsthesia without much anxiety as to the safety of the patient, and always feel relieved when everything is done and the patient has not been asphyxiated by the presence of a blood-clot in the glottis.



When an anæsthetic is required at all in these operations, it is necessary that the anæsthesia be quite profound, for it is only in those cases where a considerable amount of tissue is to be removed that we would consider anæsthesia necessary. The danger of trouble is therefore increased under these circumstances.

I have devised and had made by the W. F. Ford Surgical Instrument Company a simple instrument, which may be used with perfect ease and which successfully avoids the difficulties mentioned above. It also permits more time for the operation.

It consists of a hard-rubber O'Dwyer intubation tube of any desired size (a set of three is all that is required), to which is attached a hard-rubber tube of the same caliber screwed into the tube by means of a metallic thread. Two slight curves are given to the mouth tube that it may not be in the way of the forceps or curette or other instrument in operations other than for removal of adenoid tissue. The turn to the left permits it to be steadied by an assistant when necessary. The mouth tube acts as the applicator. I do not introduce it until the patient is anæsthetized. The anæsthesia may be kept up through the mouth tube when required for a long operation. I have added for this purpose a little ether cone, similar to that of the Trendelenburg tampon cannula.

The obturator of the O'Dwyer tube has not been found necessary, as the distal end of the tube is made more rounded, taking the place of the obturator. We have, moreover, a normal larynx to deal with, free from membrane.

117 West Ninety-third Street.

Miscellany.

The Anomalies and Complications of Measles.—The *Gazette médicale de Paris* for May 12th publishes an article on this subject by M. C. Fiessinger, of Oyonnax, who gives his conclusions based on many years' experience with this disease. Contagion, he says, is generally manifested during the period of invasion, and had been direct in all his cases except one. M. Fiessinger has no confidence in Grissole's assertion that dentition aggravates the prognosis of measles. Three circumstances may present themselves: 1. During the normal course of the disease the eruption of a tooth occurs. 2. The rash terminates and the fever persists; bronchitis and diarrhœa set in, and these symptoms disappear a short time after the eruption of one or more teeth. 3. The dental eruption is accomplished, but the symptoms become aggravated and death ensues. From this the author concludes that dentition does not influence the prognosis of measles. In three quarters of his cases the eruption had appeared on the third, fourth, or fifth day, but it had sometimes been delayed until the sixth or seventh, and much more rarely until the eighth or ninth. On the other hand, it is sometimes precocious; he has seen it appear on the first day in a child convalescent from endemic influenza. In the author's experience the morbillous exanthem had been seen to develop on the body before attacking the face, and in four cases urticaria had been observed. The urticarial elements had formed white, flat elevations encircled with a red areola; these elevations had appeared on the back, the loins, and the lower limbs before the morbillous exanthem developed and subsided with its appearance. In another case the two eruptions had been simultaneous, the measles attacking the face, while the urticaria spread over the back, the loins, and the thighs for several hours and became rapidly obliterated before the exanthem developed. The urticarial eruption which precedes measles does not, as a general thing, itch very much, and, ordinarily, the temperature does not show any unusual deviation. In two cases only, when the exanthem appeared the fever decreased instead of increasing, and the temperature fell to the normal point.

During the course of the disease hæmorrhages are frequent, and, in addition to epistaxis, M. Fiessinger had observed hæmoptysis and vomiting of blood, also hæmorrhage from the right ear. Measles is often prolonged by bronchitis; there are moist râles localized at the base and back of the lungs, accompanied by dyspnœa more or less pronounced; diarrhœa sets in with the bronchitis, and fever persists until the temperature has risen to about 102·1° F. The line of demarkation between simple and capillary bronchitis is not very distinct, and during an epidemic, when the physician is pressed for time, he is apt to attach but a slight value to the bronchial signs, and the bronchitis becomes extended, dyspnœa increases, and death follows several days after a favorable prognosis. The stethoscopic signs of morbillous capillary bronchitis often fail to be distinct; moderate dullness on percussion and blowing respiration, indicating congestion or concomitant pulmonary hepatization, may be absent, and the resonance of the lungs remains normal. The reason for this absence of stethoscopic signs depends on one of the two following causes: 1. The lesions are so slight in extent or so profound that they present themselves under the form of focuses so disseminated, or are separated from the thoracic wall by such a thickness of healthy pulmonary tissue, that they are not accessible to the finger or to the ear, and the physical signs do not manifest themselves. 2. The bronchial lesions are really very limited, and the autopsy shows that to them can not reasonably be attributed the dyspnœa and the elevation of temperature observed during life. In this case it is a question of accidents of a toxic order, of a true putrefaction of the blood of which a streptococcus is the habitual agent. Whatever the cause may be, says M. Fiessinger, the physician should be on his guard.

Death from capillary bronchitis or broncho-pneumonia is not always rapid; a fatal termination in pulmonary complications may not take place for several weeks. In the author's experience these two complications had scarcely manifested themselves at the beginning of an epidemic, and seldom in villages where the population was scattered. The former is contagious, as has been demonstrated by M. Bard in an article published in the *Lyon médical* for January 13, 1889.

Sometimes death seems to be due less to pulmonary lesions than to the intensity of the digestive troubles. Diarrhœa induces a rapid prostration which causes death in the beginning of the disease before the eruption has had time to appear. Again, in some cases where no bronchial or digestive complications had been observed, death was sudden, and could be explained only by the intensity of the disease.

Tracheo-bronchial adenopathy and tuberculous meningitis are the most serious and the most frequent complications. Death from the former had been observed by the author during a period of from several weeks to several months after recovery from the eruptive fever. Pertussis-like coughing set in, the voice became hoarse from compression of the recurrent nerve, there was severe dyspnœa accompanied by spasmodic inspiration, and at intervals the attacks caused cyanosis of the face. There was dullness on percussion in front, at the level of the first piece of the sternum. The subcutaneous veins of the antero-superior region of the thorax were very much dilated; emaciation was rapid and loss of appetite complete, and the face became œdematous during the last days of life.

Tuberculous meningitis is a complication of frequent occurrence, and in a year following an epidemic of measles the number of cases in which this complication sets in is four or five times as great as in an ordinary year. Tuberculosis also invades other tissues than the bronchial ganglia and the meninges. The first signs of Pott's disease had been observed in a child of three years, four months after recovery from measles. Otitis, kerato-conjunctivitis, and ulcers of the cornea, which may cause loss of sight if they are not attended to, not infrequently follow measles.

Infantile paralysis and acute nephritis, two rare complications, had been observed by M. Fiessinger. The first was in a child of nine months, whose limbs became completely paralyzed a month after recovery from measles; there was also considerable muscular atrophy, with abolition of the tendinous reflexes. Final recovery was effected in two months. The second complication had been observed in a boy ten years old, who became bloated and passed large quantities of albumin. He was kept on a milk diet for fifteen days, after which time the renal lesion was overcome.

One of the most generally discussed complications is the return of the disease itself. The author had observed the case of a little girl who was taken sick a day or two after recovery from the first attack. Coughing and diarrhœa set in, and the exanthem appeared on the face and limbs, and was especially pronounced on the back and the loins. Three days later the eruption disappeared, and at the end of a week recovery was complete.

Ethyl Bromide as an Anæsthetic.—The *Gazette médicale de Paris* for May 12th contains a report of the proceedings of a meeting of the *Académie de médecine* at which M. Suarez de Mendoza, of Angers, related the case of a woman who had died suddenly during the first inhalations of ethyl bromide. The death, he said, should be attributed to cardiac syncope, provoked by the action of the vapors of this anæsthetic on the ends of the nasal nerve.

The same journal publishes a paper on the subject of ethyl bromide as an anæsthetic, which was read before the *Société de chirurgie* by M. Terrier. The author remarks that he has employed ethyl bromide, alone or mixed with chloroform, for a long time, both in the hospital and in his private practice. He had had such variable results from the use of this anæsthetic that he felt it was his duty to analyze several specimens. The public authorities furnished an ethyl bromide that was impure. It was prepared with phosphorus, bromine, and alcohol. The phosphorus employed was impure; it gave out hydrogen phosphide, which caused the alliaceous odor noticed in patients who had been anæsthetized by this method. The ethyl bromide of commerce was prepared with sulphuric acid, ethylic ether, and potassium bromide; this method gave a much purer product. Ethyl bromide contained, then, a large proportion of ethylic ether, and was preferable to that used in the hospitals. The ethyl bromide in common use was not to be compared to the former; the latter contained various substances, and this fact explained the difference in the results. M. Bazy had observed that vomiting rarely followed anæsthesia with ethyl bromide alone, but thought it was not so in "mixed" anæsthesia, as with the latter method, in the case of a child, he had observed abundant vomiting on the patient's return to consciousness.

Antipyrine as a Vesical Anodyne.—In the May number of the *Annales des maladies génito-urinaires* there is an article on this subject by M. Vigneron, of Marseilles. In regard to the local treatment of inflammation of the bladder, says the author, it is borne quite differently in different cases. When the disease is of moderate intensity, when the application is quite appropriate to the nature of the lesions, when the strength of the solution is not too great, when the method of its application, whether by irrigation or by instillation, has been judiciously selected, and when the temperature of the liquid employed is neither too low nor too high, the patient bears the treatment very well. At the time of the application he feels no pain; at the most, during the first few micturitions there is very slight burning, which diminishes as the applications are repeated.

Unfortunately, there are some persons with whom things do not pass so simply. Scarcely is the liquid inside the bladder when it provokes intense pain, ordinarily a sensation of burning, radiating in different directions, and violent contractions of the bladder are produced at the same time, provoking repeated painful and unavoidable acts of micturition, which may in the end be accompanied by the loss of a few drops of blood. The paroxysm lasts for a longer or shorter time, and grows less severe as it is repeated. In persons affected with prostatic disease these contractions may be produced without resulting in the passage of urine, so long as the quantity of liquid contained in the bladder remains below that of the normal residue. Such intolerance rarely persists long if the treatment is well conducted. Most commonly it diminishes after a few days—as soon as the treatment has led to a moderate mitigation in the condition of the lesions. The author has often had proof of this in persons affected with prostatic disease, or with blennorrhagic, calculous, tubercular, or other cystitis. But there are some bladders, he says, in which the depth of the lesions seems to hinder amelioration and tolerance from resulting, and in which the atrocity of the pains would force one to give up local treatment, or at least to come down to the employment of solutions too weak to have any good effect, or to resort to operative procedures. Such was the case with a prostatic patient who declined cystotomy, and the author conceived the idea of employing antipyrine as a vesical anodyne. In two subsequent cases the author has been able to verify its anodyne action, and he mentions Professor Guyon as having used antipyrine for the same purpose. The author gives the clinical histories of three cases, and concludes from an analysis of them that antipyrine may be of great advantage in urinary surgery as a vesical anodyne. The first point that seems to him to be established is that of the perfect harmlessness of antipyrine in the bladder, even when its use is prolonged for months. In spite of very deep and very extensive lesions of the bladder—lesions which increase the absorbent power of the mucous membrane and therefore caused him to avoid the use of cocaine, the dangers of which are but too well known, even in the case of a healthy bladder—in the case of the first patient mentioned, no accident was observed as regarded either the skin or the digestive canal, and there was no effect upon the function of the kidneys. There was the same local tolerance. Antipyrine has been employed also, he says, as a hæmostatic by injection into the bladder, and he himself has used it for this purpose, without any effect to be sure, but also without inducing any complications. He has therefore felt warranted in considering it a sufficient antiseptic; experience has warranted him in the opinion that it is equal to boric acid in this respect. As regards its anodyne action, the results are as follows: A solution of antipyrine allowed to remain in the bladder allays painful contractions. This point seems to him settled. From the day when he began to make use of it the first patient could no longer get along without it; twice he tried the use of nitrate of silver followed by that of boric acid, and on both occasions the pain returned. On two occasions the author, in order to assure himself that he was not dealing with a patient susceptible of "suggestion," substituted a solution of boric acid for one of antipyrine without telling the patient, and each time the painful contractions took place as before. When antipyrine is applied only temporarily within the bladder, for the purpose of doing away with the pain which might be provoked by a subsequent application, its anodyne virtue, although not absolutely wanting, is much less decided. If the strength of the solution is feeble (1 to 200), it acts either not at all or only very slightly, and on the condition of being allowed to remain for a very long time—at least twenty minutes—a time much longer than is usually practicable. A stronger solution (1 to 25) acts sufficiently in ten minutes, more or less decidedly diminishing the pain of an instillation or an irrigation subsequently performed. Antipyrine in solution seems to be indicated as an anodyne in all cases of cystitis in which topical treatment is painful. In cases in which the bladder is not distended one may inject for such a purpose from three to six fluidrachms of a four-per-cent. solution of antipyrine into the bladder about ten minutes before the therapeutic procedure is to be carried out. When the bladder is distended, in order to prolong the procedure indefinitely, one should inject, after the irrigation, from two to four fluidounces of a one-per-cent. or a half-per-cent. solution and leave it in the bladder.

The Early Diagnosis of Cancer of the Cervix Uteri.—The *British Medical Journal* for May 12th gives a report of an address delivered before the Southeastern Branch of the British Medical Association by Dr. Ernest Herman, of London, in which he says that the early diagnosis of uterine cancer is important, as secondary growths occur later and more seldom with cancer of the uterus than of any other part of the body, and, if it is removed, there is a better prospect of freedom from recurrence than in any other form of the disease. Modern improvements, he says, have made it possible to remove cancer of any part of the uterus, so long as it is limited to this organ, with little risk, but to be successful it must be limited to the uterus. Cancer of the vaginal portion begins in a part that can be felt and seen, and it can be diagnosticated earlier than any other form, and therefore ought to be more successfully treated; cancer of the cervix spreads more rapidly beyond the uterus than the other form, and is less amenable to treatment. This disease occurs chiefly toward the end of the child-bearing period, but it has been seen in childhood and in extreme old age, and therefore the patient's age should not influence the diagnosis in the least. A tendency to cancer is sometimes hereditary, but this should not have the slightest weight, as only a very small proportion of patients inherit the disease.

The first symptoms of cancer are usually hæmorrhage and leucorrhœa; pain and wasting come later. The early diagnosis is so important, says Dr. Herman, that any unusual hæmorrhage or discharge in a woman who has had children is a reason for vaginal examination, for it may be the first symptom of cancer, and the nature of this disease can not be determined without local examination. In considering the local signs, the features which distinguish cancer in any part of the body must be taken into consideration.

When cancer begins as an outgrowth from the surface it may look like a growth of warts, or papillæ, or granulations on the vaginal portion, and the surface feels uneven or even rough. It may begin also as an ingrowth beneath the surface. It can be detected by an angry, livid red spot the surface of which is at first quite smooth. This angry color depends upon the vascularity caused by the new growth and upon its tendency to break down, which leads to minute hæmorrhages into the growth before the breaking down is extensive enough to make a breach of the surface. The livid surface of a cancer spot bleeds on being rubbed, so that a smooth, dark-red spot, bleeding on contact, is very suspicious. This is the earliest stage of cancer, and if there is a nodule that can be felt, the suspicion is still stronger. If the cancer has so advanced as to form a growth like a mushroom or a cauliflower, the diagnosis can scarcely be doubtful.

With regard to microscopical diagnosis, Dr. Herman thinks that the value of the microscope has been overestimated, and that to rely upon its use may lead to many mistakes. It may now and then, he says, reveal cancer in a doubtful case, but negative microscopical evidence should never be trusted. The characters seen with the naked eye and the behavior of the growth should always be taken into account as well as its histology, and if the two conflict, the behavior is the more trustworthy. If the case is a doubtful one, behavior of the suspicious part under treatment is the best test. One or two applications of strong carbolic acid will improve the local condition, and the diseased part will cease to bleed on contact. If the disease is cancer, these applications will stimulate its growth, and the local changes will be more pronounced after such treatment.

If there are symptoms indicating cancer of the cervical canal, and nothing is detected with the fingers and the speculum to account for them, the suspicion can be confirmed only by dilating the cervix. The liability to error in conclusions based on a microscopical examination of broken-off pieces, says the author, applies more strongly to this form of cancer than to that of the vaginal portion, as it is not possible to detect where the broken-off pieces come from. This form of cancer advances so rapidly, and the initial signs are so slight, that the opportunity seldom occurs for early diagnosis and treatment.

The Massachusetts Medical Society will hold its one hundred and thirteenth annual meeting in Boston on Tuesday and Wednesday, June 12th and 13th, under the presidency of Dr. James C. White, of Boston. The section meetings will be held in the Harvard Medical School, on Tuesday. The programme for the Section in Medicine, under the chairmanship of Dr. F. C. Shattuck, of Boston, includes the following: The Protective Power of Vaccination, by Dr. J. H. McCollom, of Boston; The Technique of Vaccination, by Dr. W. N. Swift, of New Bedford; and Radical Differences in Methods of Cultivation of Vaccine Lymph, by Dr. S. W. Abbott, of Wakefield. The special order for the Section in Surgery, under the chairmanship of Dr. F. K. Paddock, of Pittsfield, is a paper on The Cure of Carcinoma of the Breast by Operation, by Dr. W. T. Bull, of New York. The Shattuck Lecture will be given on Tuesday evening, by Dr. Thomas Dwight, of Nahant, on the subject of The Range and Significance of Variations in the Human Skeleton. The general meeting will be held on Wednesday, in the Mechanic Building, on Huntington Avenue. The programme is as follows: Ichthyol in Gynæcology, by Dr. Malcolm Storer, of Boston; Chronic Inflammation of the Seminal Vesicles, by Dr. G. W. Allen, of Boston; and The Frequency of Puerperal Sepsis in Massachusetts—its Diagnosis and Efficient Treatment, by Dr. Edward Reynolds, of Boston. At noon the annual discourse will be delivered by Dr. R. H. Fitz, of Boston. The annual dinner will be served at 1 o'clock P. M. in Grand Hall.

Acute Amygdalitis.—The *Gazette médicale de Paris* publishes an article on this subject in which the author treats of the ætiology, nature, pathogeny, etc., of the affection. Acute amygdalitis, he says, comprises simple infecting, suppurating infecting, and grave infecting amygdalitis. It is rarely found in an isolated condition; when the tonsils are inflamed there is always angina more or less extensive. That amygdalitis is an infectious disease is proved by the general symptoms—which are sometimes serious—by contagion, by epidemics of angina, and by the presence of microbes, streptococcus and staphylococcus multiplying in the tonsillar follicles. The disease, then, is septic and infectious, local or general, according to the case, and may be suppurative, erysipelatous, phlegmonous, or furuncular. It is most common in children and in young persons in whom the circulation is active, and while the genital organs are developing. Other circumstances favoring it are enlarged tonsils, preceding attacks, calculus of the follicles, cold, uncleanliness of the mouth, traumatisms, and sores of the mouth which open the vessels and thus favor infection. The functional symptoms are a spontaneous smarting pain provoked by deglutition, radiating toward the ear, disturbances of the voice and the respiration, deafness, and difficulty in opening the jaws. The local symptoms are tonsillar hypertrophy, intense redness, œdema about the tonsil, a pultaceous coating, hypertrophy of the glands (follicular angina), and obliteration of the follicles. The inner surface of the cheek is painful, and the tonsils are hard and elastic to the touch; on submaxillary palpation there is painful tumefaction, for sometimes the carotid and submaxillary ganglia are slightly choked up. The general symptoms are variable according to the form and gravity of the infection. Among the non-suppurating forms of tonsillary angina are simple catarrhal and grave amygdalitis. In the latter the symptoms are generally severe, recovery is slow, there is collapse, and convalescence is long. Among the suppurating forms are parenchymatous amygdalitis, or tonsillar phlegmon (which is sometimes accompanied by sphacelus of the tonsils), and circumtonsillar phlegmon. The grave forms are the hyperseptic, in which death is rapid and hyperacute septicæmic accidents occur; the septic, which is serious; and the pyæmic, which is still more serious. In these forms abscesses make their appearance in the liver, the kidneys, the joints, etc. It is especially in these serious forms that complications exist, and they comprise three kinds. Some of them result from the transportation of the infectious agent to a distance, and are, primarily, nephritis, infectious arthritis, endopericarditis, pleurisy, peritonitis, which is rare, orchitis, and oophoritis, and secondarily, infectious paralysis (without the transfer of pus); secondly, purulent arthritis, purulent pleurisy, purulent otitis, etc. (from the transfer of pus). Others, resulting from local disorders provoked by pus, are suppurating phlebitis, ulceration of the internal carotid or of the internal jugular, which is very rare, and suppurating adeno-phlegmon of the neck. Still others result from the intensity of the collateral œdema, especially œdema of the glottis. With regard to the diagnosis, it is very easy to distinguish amygdalitis from some diseases, such as small pox, measles, scarlet fever, and typhoid fever. Clinically, the diagnosis lies usually between the non-specific, diphtheritic, and herpetic amygdalitis. The prognosis is variable, according to the form of the infection, which is sometimes wholly benign, but often may become very serious.

Reflex Cough due to Ear Disease.—In a review of the current literature of otology, by Dr. H. Lavrand, published in the *Journal des sciences médicales de Lille* for April 21st, there is a summary of an article on reflex cough, especially auricular cough, by Dr. Guder, which appeared in the *Revue de laryngologie.* The author remarks that in many patients affected with ear disease the introduction of an instrument—such as a blunt hook, a curette, or a speculum—into the external auditory meatus provokes certain reflex phenomena, most commonly cough, which do not cease until the instrument is withdrawn. Although, he says, this reflex auricular cough has long been known, it has not yet been studied methodically. On exciting different localities in the external auditory meatus in two hundred persons taken as they came, the author has elicited cough in only forty-two. This cough occasionally takes on a character very distressing by reason of its persistence. He cites a case reported by Percy Jakins in which there were all the signs of beginning tuberculosis, such as cough, exhaustion, night-sweats, occasional delirium, and mucous râles throughout the chest. Both meatuses were plugged up with accumulations of wax. When these were removed the pulmonary symptoms mended very rapidly. When the hearing is not perceptibly affected, the author continues, an examination of the ears is not thought of, and so the cause of a reflex cough often remains unrecognized. Still other reflex phenomena are caused by irritation of the external auditory canal, such as sneezing, disorders of the sense of taste, and sometimes sexual excitement. In certain individuals digestive derangements supervene, and reflex disorders of the heart sometimes have an auricular origin. How, asks Dr. Guder, is the reflex cough produced? According to such authors as Hyrtl, Beaunis, and Bouchard, he says, the auricular branch of the pneumogastric nerve discovered by Arnold has its origin in the jugular ganglion or else is given off from the trunk of the pneumogastric immediately below that situation. It proceeds by way of the jugular fossa and the Falloppian canal to the posterior part of the external auditory canal. As a matter of fact, auditory reflex cough is provoked only by irritation of the postero-inferior wall of the canal near the tympanum. Why, he asks, does not everybody suffer with this auricular reflex cough? The only probable explanation lies in admitting that in certain individuals there is an anomaly of innervation at the bottom of the canal. The more or less nervous condition of the individual does not account for the differences observed. There are no distinctive characteristics of the reflex cough. Sometimes it is paroxysmal, resembling that of whooping-cough; sometimes it is explosive, short, hoarse, and barking; unless there is at the same time a catarrh of the respiratory passages, it is not accompanied by expectoration.

The Examination of the Blood in the Diagnosis of Fevers.—The importance of a microscopical examination of the blood in simple anæmia is generally admitted. Its further value in the diagnosis of fevers is set forth by Dr. W. S. Thayer, whose study of anæmia following typhoid fever recently appeared in the fourth volume of the *Johns Hopkins Hospital Reports.* He states that the examination of a fresh specimen of blood will enable the physician to distinguish typhoid from malarial fever by the absence of the hæmatozoon called Laveran's organism. In tuberculosis, whenever there is any local inflammatory process, such as exists in the great majority of cases, a certain degree of leucocytosis or increase in the colorless blood cells is always present, showing that the number of overripe elements is distinctly increased. This is probably the rule also in cases of general acute miliary tuberculosis. This leucocytosis may be absent in some rare cases of miliary tuberculosis, where the primary focus of infection is not the seat of an extensive inflammation, though there generally is a high percentage of those leucocytes or white corpuscles whose nuclei are so contorted that they appear as "multinuclear elements." According to Ouskow, typhus fever shows no appreciable change in the blood from the normal. Of the other infectious processes with which typhoid fever may be confounded, the majority are usually associated with hidden inflammatory foci, causing a marked leucocytosis with an increased proportion of "multinuclear" non-staining cells. There is absence of leucocytosis in some cases of malignant pneumococcus infection, though a subnormal number of leucocytes has never been noted, or a diminution of non-staining cells with contorted nuclei. In any suspected case of typhoid fever the examination of the blood should never be neglected, for in the absence of leucocytosis and in the changed relative proportion of the different varieties of colorless corpuscles there are two valuable diagnostic symptoms, though neither may be pathognomonic. Where the case has existed for some time, and has perhaps shown anomalous symptoms, the change in the relative number of leucocytes is particularly striking. In such cases the discovery of a much decreased proportion of leucocytes having contorted nuclei, together with a corresponding increase in the large uninuclear and transitional forms, may decide the diagnosis.

Milkmaids and the Spread of Typhoid Fever.—There are three recognized ways by which the germs of typhoid fever may enter milk. Typhoid effluvia may be absorbed by the milk; the milk may be adulterated with impure water containing the microbes; the milk vessels may be washed with water befouled with them. In the *Lancet* for April 21st Dr. J. J. Wesley reports a fourth source of contagion to be the milking of the cows by a person whose hands have been soiled with typhoid-fever dejecta. An epidemic of typhoid fever prevailed in a country district where a number of dairy farmers daily sent milk to a creamery at which the milk from all the farms was mixed, the cream taken out by a centrifuge, and some of the skim-milk, which in this method, is known as separated milk, sent back to the farms and some sold in the villages. Out of eighteen cases of typhoid fever in the country, seventeen were traced to the use of this separated milk. Of twenty-three patients in the villages, nineteen had used separated milk. There were sixty-one cases in all which were clearly traceable to the creameries. A careful investigation showed that the contagium reached the milk from the hands of the dairymaids. The nurse of the first typhoid patient was a milker on one of the farms, and undoubtedly spread the fever through the mixed separated milk. The dairymaids on several of the farms had acted in the dual capacity of milkers and nurses. It was found that many of the cows could not be thoroughly milked unless both hand and teat were kept moist, and it was almost impossible to draw from some of the cows even a small quantity of milk with a dry hand. The moistening with milk washed the typhoid dejecta from the hands to the milk-pail, where they multiplied with frightful rapidity. The district was put under the strictest regimen of cleanliness with gratifying results.

International Medical Congresses.—The *Union médical* quotes from the *Presse médicale belge* the following passage apropos of the recent Rome congresses: "Congresses are no longer great scientific sessions in which serious discussion goes on and in which one, therefore, is made to struggle with some great question of pathogeny and therapeutics. With the exception of two or three reports in which original conceptions are conspicuous for their absence, with the exception of the proposition or general review of a scientific question, followed not by a debate, but by unanimous plaudits, congresses are no longer anything more than a rendezvous for friends, an occasion for making a show, an excuse for leaving one's country and one's patients for a few days 'scientifically,' or a show of orators or readers of medical observations, which are merely indicated in the columns of a journal. We are persuaded that, to give to congresses their real scientific, and not merely their numerical and decorative, importance, it is time to change their scope and their organization. Certain great questions or problems should be put down for discussion. Let a reporter-general be nominated to condense the subject and indicate its leading outlines—nothing more, but especially let the report be followed by counter-reports and discussions, and the results obtained will be astonishing."

A Case of Multiple Tæniæ.—At a recent meeting of the *Société des sciences médicales de Lille*, reported in the *Journal des sciences médicales de Lille* for April 7th, M. Guermonprez presented, on behalf of M. Lenys, the heads of thirteen tapeworms which had been passed simultaneously by a single individual. The species is not mentioned.

The New York Academy of Medicine.—The special order for the meeting of Thursday evening, June 7th, was a paper by Dr. Paul F. Mundé, entitled Ten Years' Experience with Alexander's Operation for Shortening the Round Ligaments of the Uterus (Sixty-four Cases).

Lectures and Addresses.

THE NERVOUS SYSTEM IN DISEASE,

AND THE PRACTICE OF MEDICINE FROM A NEUROLOGICAL STANDPOINT.

By C. H. HUGHES, M. D.,
ST. LOUIS.

(*Concluded from page 710.*)

Neurodermatological Advance.—Mr. Malcolm Morris, in his presidential address before the Harveian Society of London, reviewing the progress recently made in dermatology, after noting the fact that we now recognize the precise microbic agents which produce lupus, scrofuloderma, impetigo, leprosy, and glanders, and speaking of the "new light" which experimental pathology has thrown on the nature of disease processes and the factors concerned in their production in the skin as in other organs, says:*

"Almost the only distinct evidence of progress apart from local treatment to which I can point, is the fuller recognition which has been arrived at of the influence of the nervous system in the production of skin affections. . . . The knowledge of the intimate pathological connection between the nervous system and the skin gives the key to the successful treatment of many cases which defy all local measures."

The same light has lately dawned on gynæcology and every department of medical practice. We are approaching an era when the whole patient is to be treated, no more only a part or organ solely, and neurology will have a paramount place in general clinical medicine, notwithstanding the recognized and merited advances of bacteriology in pathogenesis.

Certain Heart Affections Proceed from the Brain.—What is true of the influence of the nervous system over the stomach in dyspepsia and the lungs in the pneumonia of influenza, is also true of its influence in the production of certain diseases of the heart. They come from different conditions of the brain, and here again has medicine, in its work for the world's welfare through physiological research, faced the prejudices of a frowning world against the so-called cruelties of vivisection.

Though the heart of a frog removed from the body will pulsate for hours, if fed with blood or blood serum, and will continue to beat even when divided into sections except at its apex, and even this will beat if tied to the end of a tube and fed under pressure, its conditions of nutrition in vertebrates are determined directly by the nervous supply of the organs and indirectly by the blood (Mills), and the influence of the cardiac nerves becomes more pronounced as we ascend the animal scale, and in the heart of a frog there are ganglion cells in the sinus venosus, in the auricles, and in the ventricles (ganglia of Ludwig, Remak, and Bidder). They are also in the warm-blooded animals, such as dogs, sheep, etc.†

When the heart is severed from the central nervous system by section of the vagi nerves, or destruction of the vagus center takes place by traumatism or disease, profound changes in the heart's structure ensue. This points to central trophic influence through the vagi and to the often central nervous origin of heart disease. The regularity of the heart's rhythm from and strengthening of its beat through vagus stimulation and central stimulation, as by certain volatile and internal stimulants, is suggestive.

We are now able to understand how many disorders of the heart are coincident in their inception with occasions of fright and worry and anguish, sudden accesses of extreme ire, disappointment, prolonged enforced vigilance, and other brain strains. These, as Mills tersely says, point to influences of a central origin as greatly affecting the life processes of this organ.

Czermack, by pressing a bony tumor in his neck against the vagus nerve, and Hermann and Colonel Townsend, by repeatedly suspending the heart's beats at will (the latter once too often, for he died from his final experiment), also proved the central and vagus nerve influence over the heart. Nervous influences certainly play no small part in the causation and modification of the heart, and, with Mills, we would "extend such a view to all parts of the body," especially in man. The source of the heart's diseases is often in the brain and other parts of the nervous system, and so is the source of many other diseases for which only the organ displaying the functional disorder, and the blood which nourishes it, are treated, whereas we should oftener treat the whole man, nervous system and all, but the nervous system especially, if we would be most successful.

Now, therefore, in a newer, broader, truer sense than ever before, do we recognize the monism of man. Not in the sense of the philosophical schools, but in a psycho-neuro-physical sense in our survey of his physiopathology. In estimating the causes, concomitants, and sequences of his diseases, we consider the whole man in his psycho-neuro-physical relations. As the "medulla oblongata is functionally the ruler of vegetative life," so it governs and influences many diseases, as the psychical and psychic centers of the cortex influence it and the centers below it, as the recto-genito-urinary centers of the cord, etc.

As we recognize psychic influence over our physiological life, over physical and mental habits, so must we come to acknowledge it more generally in our dealings with disease. The physiological law, that habit in the psychical life develops a tendency to recurrence, is also exemplified in the disposition of certain diseases to recur, and the interrelation between muscular and mental tonus suggests the importance of maintaining the psychical tonus in the treatment of all diseases, and the successful therapeusis of hypnotism proves it in many.

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* *British Medical Journal*, January 27, 1894.

† So that, while conceding spontaneous muscle-cell pressure and protoplasmic contractility, we know that in certain cases cardiac contractility is modified by medulla and vagus stimulation, to the degree of arrest, slowing, enfeeblement, or intermittency.

When the vagus influence is altogether inhibited, the heart's action is increased in force and frequency, while section of both vagi leads to histological alteration and fatty degeneration. The sea turtle's heart has been suspended through vagus stimulation for six hours, causing its death. The heart dilates with or without blood during vagus arrests from vagus section, drug impression, or electric excitation. The heart may be reflexly inhibited by gastric and abdominal reflex irritation, flatulent dyspepsia, the Klopfersucht of Goltz, etc. If one or both vagi are intact, stimulation of the medulla arrests the heart. The conclusion of a cardio-inhibitory and accelerator center in the medulla, which influences the heart through the vagus, is the obvious teaching of physiology.

As it is difficult to believe in force existing not in contact with matter, and without matter existing on which force can display itself, so it is difficult to conceive of the existence of disease in the human body without an influencing or influenced—*i. e.*, disturbed—nervous force.

Henry Maudsley has likened the physiological life of the cerebro-spinal centers to the mutual interrelated and subordinated movements of the companies, battalions, and brigade of an army under command of the higher ganglion cells of the headquarters in the brain, and mental disease to mutiny and rebellion. Huxley has likened the body to "a machine of the nature of an army, not that of a watch or of an hydraulic apparatus. Of this army each cell is a soldier, an organ, a brigade, the central nervous system the headquarters and the field telegraph, and the alimentary and circulatory system the commissariat. Losses are made good by recruits born in the camp, and the life of the individual is a campaign conducted successfully for a number of years, but with certain defeat in the end." Each tissue, under the trophic influence of neural communication with its appropriate nervous headquarters, conducts its own repairs—*i. e.*, replenishes its own forces. When proper physiological conditions, including neural connections, are maintained, each tissue in the animal economy correlates its own proper life force. Destroy a trophic center, and the part it innervates atrophies; sever a motor nerve, and the muscle it supplies is paralyzed; cut a sentient nerve, and no power of our art will restore sensibility over that channel that does not reunite or reproduce the nerve. Our aim in the practice of medicine, then, should be to save the nervous system and to conserve neural integrity and force in relation to all parts of the organism suffering under the depressing influences and destroying tendencies of disease.

This should be our aim always, whether we are enabled to make a satisfactory local diagnosis or not, for if we succeed in saving the nervous system absolutely, we save the man; for it is only after disease makes its final resistless inroads here that our patient dies.

Hæmophilia and the Vaso-motor System.—The neuropathic source of hæmophilia in the vaso-motor system is more probable than any asserted dyscrasia of the blood, and cholera is so largely a condition of nervous prostration in its symptomatic expression, that if we treat it on this theory, keeping the patient absolutely recumbent and give him copious hot-water drinks and enemata, we are more apt to save him by this than by any other one plan. Of course, the comma bacilli should be searched out at the same time with our hot drinks and colon clysters, and destroyed so far as may be practicable; but it is the damage done to the nerve centers that we wish to guard against in this disease until the collapse stage passes, the bacilli are destroyed, and reaction comes on. Cold colon douches are likewise of some benefit. I think the water does the work, and not the soap, in Elmer Lee's plan of treatment, which I uphold on the physiological principle that the abdominal ganglionic centers and, by eccentric impression, the spinal nervous system are favorably impressed by his method, while such bacilli as the water can reach are washed out of the intestinal tract; but these are not the most of them.

To divest ourselves of undue skepticism in regard to the influence of the nervous system in the development of what we are accustomed to call disease, but which is often the sensible pathological product of a morbid process, we should recur often to the physiological possibilities of the mechanisms of neural control over the arteriole system and of sensation and motion.*

Body Temperature and Fever Dependent on the Conditions of the Nervous System.—That remarkable phenomenon, the uniformity of the temperature of the human body at all latitudes and in all seasons, is due to the regulating adjustment of the circulation, perspiration, etc.; to environment, through the nervous system; and when the temperature is disturbed it is due to irritation, mechanical, chemical, or toxic, of the nervous system, as in traumatic violence, microbic, septic, or drug disturbances.

It must by this time be apparent from what we have already said that the intimate physiological relations between the nervous and the vascular and glandular systems justify these pathological inferences and confirm the clinical facts.

"The nervous system has so close an alliance with the functional activity of the secretory and excretory glands of the body that emotional disturbances, according to their character, act as depressants or excitants of the functional life of these organs. Some of the more common of these effects are every-day familiar facts, as when the flow of tears is excited by grief, or the secretion of saliva and gastric juice by the smell of food." And it is believed that "in the same manner as the superficial glands are easily influenced, so, in all probability, are the blood-making or ductless glands † regulated and controlled by the organic nervous system."

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* Brown-Séquard, for instance, produced hæmorrhage into the auricles of guinea-pigs by section and irritation of the restiform bodies in the medulla, and flushed the neck and face by section of the cervical sympathetic. In this we have the explanation of hæmatoma auris and cerebral hyperæmic states.

It is through the nervous system that we may understand how the hair turns in melancholia and may thicken in chronic mania or dementia of the less distressed and more stupid and inactive forms; how its color may turn from dark to white and back again to dark, with the access and recoveries of recurrent insanity; how it may become glossy and dry, erect or flat, be lost and regained under certain mental conditions; and how the teeth may decay, the bones and nails grow brittle, and the skin become harsh from the same cause; and how, from neuritis, the nails are transformed, and the limbs waste as well as fail in sensibility and mobility, besides the eczematous, pigmentary, and horny changes of the skin from nerve injuries.

† Dr. A. D. Rockwell, in the *New York Medical Journal*, December 10, 1892, maintaining the nervous origin of jaundice, said he had had occasion to see and treat a considerable number of cases of jaundice dependent upon a great variety of causes, and he had been impressed with the frequent occurrence of cases due to deranged innervation, interfering with the normal metamorphosis of bile. Acute atrophy, in which the secreting cells were rapidly disintegrated and the functions of the organ arrested, appeared to him in many instances to have a

The Nervous System and the Liver.—The influence of the nervous system over the liver was believed in by the ancients, who, mistaking coincidence for sequence, attributed melancholia to atrabilis. Murchison asserts a well-observed fact that the secretion of bile is interfered with by prolonged mental anxiety, worry, and incessant mental exertion, and that sanguification and blood changes, in which the liver takes part, often result from mental causes.

I think we need no longer doubt this, or indeed any possibility to neural influence, when we see pernicious anæmia follow degenerations of the spinal cord, and progressive muscular atrophy and anæmia follow cerebro-spinal concussions.

If the mind has such potency, how careful should physicians be of their demeanor or speech before patients! How guarded as to prognosis! And the surgeon, how careful should he be as to the undue and inopportune display of his operative armamentaria! With these facts in view, the propriety of large medical and surgical wards, where the sufferings and death of one patient may be readily known to the others in the ward, is questionable. Other obvious considerations needless to mention here are suggested in this connection.

These neural connections, direct and indirect, between the centers of the brain and the circulation, the viscera and the secretions, reveal the physiological basis of all forms of psychotherapy, of faith cures, mind cures, and modern miracles, of the principles of which those who perform them are usually ignorant; also of hypnotism and its therapeutic results.*

Leucœmia as a Neuratrophic Blood Disease.—Leucæmia is another and most remarkable condition which may result from profound nervous exhaustion or shock, or from malarial neuratrophia, and shows how the blood may change through nerve influence, as cretinism and pachydermic cachexias show the relationship of thyreoid and nervous degeneration, and as thyreoid extirpation also proves.

The Rattlesnake Poison First Produces a Deadly Nervous Shock.—If the remarkable blood-cell changes of this disease may originate in morbid neural impression, it would seem unnecessary to go further for proofs. But the poison of the rattlesnake and other toxic substances may kill through immediately fatal shock without detectable lesion, though grave structural changes follow, especially in the destruction of the blood's fibrin, and later putrefaction, in the case of crotalus poisoning, if the patient survive any considerable length of time.*

The nervous system is the supreme ruler in the organism. When disease enters, it is weakened; when death takes place, it is dethroned. The germs of malaria, tubercle, cholera, typhoid, tetanus, etc., or the living virus of any fever, make no fatal inroads until they break down and destroy centers of neural control and resistance.

Whatever view we may take of bacilli, bacteria, or cocci which our glass may reveal to us in the damaged organism, whether we regard them as carrion about a carcass, rats forsaking a sinking ship, thieving, destroying, or scavenger parasites, one thing is certain—viz., disease becomes manifest only after the mechanisms of neural sensation, emotion, ideation, or control reveal it, for, as I have elsewhere said, the nervous system is the central executive and universal sentinel system of the organism. It governs and legislates for the physiological body, exercising moving, restraining, regulating, or inhibitory power over organic processes in health and in disease. It has its subordinate tributary and sustaining forces in the glandular, vascular, osseous, and other systems. It commands, governs, and regulates them, and they influence it, as the citizens and subordinate officials of the State may influence and even govern the chief executive or the king.

Raynaud's disease, with its local asphyxia and symmetrical gangrene of the extremities, though its cause may be uric acid, as Haig (*Uric Acid in the Causation of Disease*, second edition, p. 201) maintains, is manifest to us, as Raynaud believed, through spasmodic contraction of the capillaries, as the gangrene of ergotism is.

Haig contends that the uric-acidæmia of gout and rheumatism "contracts the arterioles and produces high arterial tension," and that glycosuria is the alternative of and contemporaneous with gout, Ord maintaining that the congestion of the liver is due to high arterial tension, while Pavy, according to Haig, credits diabetes to a vaso-motor paralysis of the chylopoietic circulation, which allows arterial blood to be supplied to the liver in place of venous (*British Medical Journal*, 1883, pp. 863 to 866).

Haig concedes that the hepatic congestion dependent on the state of the vaso-motors develops the saccharine diabetes, thinks the uric acid causes that, but attempts no explanation, except a dietary one, of the uric acid in the blood.

If I had the time to write a book on this occasion, I think I could show the nervous system to be primarily at

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purely nervous origin; and very often the first symptoms of the disease occurred immediately after a severe fright or an outburst of passion in a person previously healthy. An impression made upon the brain appeared to be reflected to the liver and to derange its nutrition. Even cancer of the liver appeared sometimes to result from the functional derangement induced in the first instance by mental trouble. So this condition appeared to him.

* The wise physician combines chemistry and a scientific *materia medica* with honest and hopeful mental impression, establishing in the patient where he can, and when it is justifiable by the clinical facts without deception, a buoyant psychotherapeusis in the patient himself. The lengthened visage, the hopeless foreboding, the dismal and solemn aspect, and funereal demeanor on the part of the physician are not only out of place and unjust to the patient, but are bad therapeutics.

* How speedily the symptoms of this poison follow, if death be not instantaneous; the cry of terror, the giddiness, the syncope, the vomiting, the prostration, the rapid, irregular, imperceptible pulse, the sunken eye, the swollen face and body, the jaundiced, cold, clammy, vesicled skin, the delirium, sleeplessness, torpor, coma, involuntary intestinal and vesical discharges, tremors, convulsion, and death! First the nervous shock, and then the blood disorganization and organic dissolution.

Drysdale examined the cases immediately fatal with the best of lenses and found no lesion. The nervous system was directly stricken, and life, of which the cerebro-spinal and ganglionic systems in man are the representatives, ceased. The physiological barrier wall in the nervous system is broken and disease invades.

fault in the uric-acid diathesis, and that migraine, epilepsy, morbus Brightii, diabetes, and melancholia, which attend upon the chronically gouty and rheumatic, and alternate with these states, are varying neuropathic states with uric-acidæmia, albuminuria, and sacchæmia as their sequences. But this would be profitless. The practical clinical and therapeutic lesson is to correct both the abnormal blood and the faulty nervous states.

The contracted arterioles which raise the tension in the arterial system and diminish the circulation through the organs and tissues of the body need remedying, as well as the uric-acidæmia, the "hetero-albuminæmia, albuminuria, etc.," and the deficient circulation and the deficient metabolism of organs and the disordered assimilation, as well as diet; for some persons may eat any kind of food and have neither gout nor rheumatism, no diabetes nor Bright's disease, so long as the governing nervous system maintains the physiological equilibrium and sustains and secures it against pathogenic forces from without and within.

A change in the weather or a certain exposure sends one man to bed with rheumatism, another with pneumonia, and a third comes down with remittent or intermittent fever, or phthisis. We say uric acid in the first case, pneumonococci in the second, malaria in the third, and tubercle bacilli in the fourth.

But why do these morbific forces now more than any other time come so opportunely and seize upon their prey?

We say it is because the vitality is lowered and the organic resistance is lessened. What is that vitality, that organic resistance, which permits one man to brave an atmospheric or climatic environment with impunity from disease, in which another falls a certain victim? What is it that permits one man to eat everything without being made dyspeptic, while another can swallow scarcely anything without suffering the gastric distress of indigestion? We say one has a weak stomach; but if we take into account the whole man we find it is the brain of the dyspeptic rather than his organs of digestion that has been always punished by its owner's imprudent and reckless habits, though the stomach, too, may have been abused. We get a similar answer in regard to the remote causation or determining factors of disease of many other organs. We have invented, for evasive answer, certain elucidating terms, as idiosyncrasy, diathesis, morbid proclivity, inherent organic tendencies, etc., and we make many special explanations, like the little fibs the schoolboy tells to extenuate a folly, each leading to some other and bigger fib, until he finally realizes that honesty is the best policy and he finally owns up.

My answer has already been intimated. I can not on this occasion weary you with further detail in elucidation.

I say only in conclusion, to forestall certain criticism, that, though the primal potency of the nervous system resides in the sarcode, much of its potentiality, in the highest and most complex animal life, seems to have passed in process of evolution from protoplasm to nerve centers, and the most there is of man is his nervous system. In this system reside, in a highly evoluted form, spontaneous and reflex motion, sensation, and the governing influences of assimilation and reproduction. What should we not expect of such an organism impressing and impressed by disease!

This brief survey of a broad subject brings us across the century twenty years before the one now soon to close had begun, to the immortal dictum of Cullen, the truth of which the progress of medico-scientific research in clinical medicine now confirms: "*Quantam ego quidem video motus morbosi fere omnes a motibus in systemate nervorum ita pendent, ut morbi fere omnes quodammodo Nervosi dici queant.*"

And now in the sunlight of advancing science and of the approaching twentieth century, I proclaim that neuriatry and the practice of general medicine are practically one.

The practice of medicine is rapidly becoming one of neurological methods, of neuriatry and psychiatry, and the best neurologist, all other attainments being equal, must of necessity make the best general practitioner. What Lord Chesterfield said of a Christian gentleman, I would paraphrase and say of the neurologist, that he is the highest type of physician; and of medicine as a whole, with Hippocrates, it is of all arts the most noble.

Thus much, and yet not a moiety in regard to the relation of the nervous system to disease and practice! Thus much of neurological progress relative to general medicine. Obviously we can not now enter into the marvelous advances and wondrous resources of modern medicine. In the pages of a thousand volumes and the works of a thousand modern hospitals, her glorious record is partly made for the welfare of man as the nineteenth century recedes into history. But there she stands in her grace and grandeur, the peer of all professions! Ever faithfully by the side of man, from the cradle to the grave, in the hour of his saddest need, mindless of home or creed, she bends with pitying, substantial aid over his suffering and prostrate form, and lends strength to his weakness.

Handmaiden of sweet charity and exemplar of the golden rule, she unshackled the lunatic and brought him from his dark and dreary dungeon into light and liberty while theology was yet calling him demon or devil-possessed, and she now extends her helping hand to the inebriate while the world yet condemns him and largely withholds its sympathy. She has likewise extended her protecting charity to the epileptic, the hysteric, the victim of chorea or St. Vitus's dance, and the so-called creatures of obsession.

She has influenced courts to modify the former harshness of their ruling toward certain classes, and caused them to recognize disease and degeneracy of brain in extenuation of crime, thus tempering justice with mercy toward the organically weak and maimed in brain and mind. Judicial theories of what should constitute insanity and allied conditions exempting from responsibility to law, have given way to clinical fact ascertained through psychological expert testimony, and the "knowledge of right and wrong" test of mental aberration has, in consequence, ceased to be the sole criterion of responsibility in questions of insanity before the law.

The Treatment of Inebriety.—America was the first country to adopt, and the great Rush was the first physician to recommend, the "establishment of a hospital in every city and town in the United States for the exclusive reception of hard drinkers," and to regard the drink habit as a disease, and advise the blending of medication with religious and moral suasion. And how many regular hospitals, assisted by our State laws, are saving the inebriate from that destruction from which neither his own will, nor moral suasion, nor any other influence could rescue him! Yet no monument at the nation's capital bears testimony of the people's gratitude to this great physician and signer of the Declaration and surgeon of the Revolutionary Army. I can not help this digression when I reflect upon this nation's long-neglected debt of gratitude. I repeat the plea I made last year. Benjamin Rush's name is immortal, whether his memory is preserved in monumental bronze or not; but the Government owes his memory, his country, and the world this debt, and every consideration of delicacy, of decency, of justice to its meritorious dead, and of patriotism demands its honorable discharge. I have elsewhere discussed this subject *in extenso.*

This is the fruit of our friendship for the unfortunate lunatic, and in American courts the product of ripened seed planted in the field of forensic psychiatry by that eminent and immortal American medico-jurist, Dr. Isaac Ray, of Philadelphia, whose great work, the *Jurisprudence of Insanity*, was the beginning of a memorable era in medico-legal progress, and gave American psychiatry a distinguished standing before the courts of the country and of the world. In this classical American work the disease of brain and change of character criterion received their clearest elucidation after Andrew Combe, and since the decease of this great American alienist, that other and congenital form of mental disease, paranoia, has received clear elucidation and distinctive differentiation through the contributions of Kiernan, Spitzka, McLane Hamilton, Mann, and other American writers following the treatises of Erb and others abroad.

The hospitals for the insane, which made the names of Pinel, the Tukes and the Chiarugis, and later alienists immortal, among them our own Kirkbride and Tyler, have been followed by homes and schools and hospitals for the feeble-minded, in connection with which Edouard Seguin, of America, has an undying place in the philanthropic heart of the world, along with that of Froebel and Howe, in Germany, from whom Seguin got the inspirational inceptive idea, and patience of training and improving the mental evolution of these unfortunate defectives, and American surgery, thanks to Dr. William Fuller, of Grand Rapids, Mich., first suggested (in the face of the Old World's sneers) a possible operative remedy for the relief of certain of these defectives, the feasibility and value of which have lately been acknowledged abroad and demonstrated at home. Linear craniectomy has proved its right to a trial. It will not relieve microcephalic or porencephalic idiocy, but in other forms of arrested brain development through premature contraction of the cranial vault, this procedure has made it possible for the brain to develop, the speechless to speak, and the convulsive to cease their spasm, just as other forms of craniotomy have done for pressure aphasia and epilepsia.* This devoutly-to-be-wished-for consummation will be hastened through the general use for cerebropathic investigation and description of the marvelous piece of neurological mechanism which I now show you as the ingenious handiwork of an American anatomist, not yet so widely known to fame as he deserves to be, Dr. J. P. Fuller, of Grand Rapids, Mich. In this unique contrivance the brain has been represented in thirty-seven transverse sections, hinged together in natural form and shape, with the superimposed superficial psychomotor centers; the downward paths of conduction to the cord and the entire brain in its median and spherical and interior aspects are separately and relatively shown.†

The saving triumphs of brain surgery in other directions of prudent neurology are now simply marvelous, but more marvelous far than this wondrous work of salvage will be the saving of the brain and nervous system from the necessity of surgery, the mark at which general medicine and neurological medicine are now aiming, and a goal much nearer reached now than in the past.

Should men contest the claim of medicine to being the greatest of the world's benefactions, we reply, the germ theory of disease causation alone, with its applied antagonisms, hygiene, antisepsis, perfect cleanliness, and resistive and tolerant inoculations, has done, is doing, and is destined yet to do more for the physical welfare and salvation of mankind than all other causes of man's comfort conceived in the mind and heart of man.

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* Dr. J. F. Binney, of my own State, has this year reported in the *Annals of Surgery*, for April, one such successful operation, and Paschill reported in the *International Medical Magazine* another last year, both being followed by marked mental improvements. Each of these gentlemen likewise reports other cases without satisfactory results. Frank, of Chicago, has paved the way, I think, to the ultimate success of cerebral ventricular puncture.

† Dr. Fuller says in his preface to the great demonstrative work of his: "When a medical student, the author of this work experienced great difficulty in understanding the anatomy of the brain from plates and descriptions in books, and recognizing the fact that compared with the number of students, the opportunity of studying the anatomy from the natural brain is rare, he has carefully prepared a series of casts from actual dissections and casts, which he hopes will materially aid the teacher, and render the task of the student much easier.

"The dissections presented in this specimen are made from photographs taken of sections of a carefully prepared brain, cut a sixteenth of an inch apart and perpendicular to a line drawn from the external process to the occiput.

"Familiarity with these plates and their situation in the brain will enable the necroscopist to recognize, at a glance, any section that he has made of the natural brain, and to select the proper plate from a book of similar plates which accompanies the preparation, upon which to describe any lesion found, and which he can attach to his report of a post-mortem examination, so that others also familiar with the position of the plates comprising this series will be able to locate the lesion described.

"In this way a more ready understanding will be effected between neurologists, and it is hoped that, by this means, together with the careful observations of symptoms, the functions of many parts of the nervous system, now obscure, may be more clearly understood.

"This preparation is also invaluable to those interested in the surgery of the brain, showing, as it does, the relation of the external marking with deeper structure beneath."

But for our applied teachings of hygiene, the world having its population in the last one hundred years nearly trebled, and civilized life having become so complex and degenerating in populous centers, the race would now be on the road to extinction.

The world is beginning to clean up, and mankind to recognize the necessity of cleanliness.

We are promoting this antisepsis on our part in giving to man the purified air of heaven and the waters of the earth freed from pollution. The air and water, and the spirit in man to conceive and apply measures for their purification, together with the uncontaminated and uncontaminable sunlight, are the direct gifts of God. We have taught mankind the value of cleanliness, the life-saving and prolonging value of physical and moral purity, and, putting our precepts in practice, when permitted, we put back pestilence and turn death and decadence from individuals and peoples. We are not gods of the air, but we walk the earth as watchful, pitying gods in the service of man, saving him from pestilences that walk in darkness, and of which he knows nothing, save in their destructiveness, until medicine enlightens him and destroys the destroyer of his health and strength and attendant happiness. But for the interposing monitions of medicine, man would not to-day be awakened to the danger of making a beverage of the attenuated liquid pollutions of the soil and, falling ill all unconsciously with typhoid and other maladies, as in the days of the not far distant past, reverently submitting to the mysterious ways of the all-wise Providence, as his remoter ancestors attributed all affliction to the wrath of offended deities. So little a thing as the timely boiling and filtration of all drinking water will confer a boom on mankind, in warding off disease, which can not be computed. The application of the discovery of Jenner is as nothing in comparison—not even the great disease-averting and life-saving discoveries of Pasteur could be so potent.

As "the sun smiles on the earth, and the exuberant earth returns that smile in flowers," so do the silent ministrations of our noble profession fall upon a recipient world, which blossoms in healthful response. Our ministrations of medical charity, like those of mercy, drop

> "Like the gentle rain
> Upon the place beneath:
> Blessing him that gives
> And him that takes."

Noble followers of a glorious vocation, grand and beautiful profession! Sublimest and best of the callings of men, save that alone of the Great Physician of Galilee, whose example encourages us and whose voice approves.

Besides the ten thousand hygienic resources for warding off disease and promoting the world's comfort which it unconsciously and, without thanks to our beneficent profession, daily employs, Medicine now mitigates and annuls pain through analgesics and anæsthetics (local and general), and contributes to human comfort under the most painful circumstances to a degree far beyond that of any other physical benefaction to mankind. Medicine has minimized and trained the lightning so that it ministers to the relief of human misery and the cure of disease. She has made of it a search-light for the human body, an assuager of pain, a producer of sleep, and a destroyer of destruction.

The boon of hypnosis and narcosis under the many methods for its induction known to our art, saving the insomniac from the precipice of mental overthrow or neural failure in the lower centers of the cerebro-spinal axis or peripheral nervous system; the power of antisepsis, and through it the wonderful procedures and possibilities of modern surgery, and this *fin-de-siècle* hygiene; the many and marvelous therapeutic and hygienic advances in promoting the phagocytosis of the toxic bacteria, the destruction of the ptomaines, and in other directions of relief and cure; the discoveries of pathology, histology, medical chemistry, biology, neurology, psychology, psychiatry, and the contributions of surgery, gynæcology, ophthalmology, otology, laryngology, proctology, and the other specialties of study and work, have made the later decades of the present century the most memorable in resourceful discovery in the history of medicine or in the history of mankind.

Intravenous injections of immune animal blood serum promise much for the cure of phthisis and other chronic contagious diseases, and there appears good therapeutic promise for the coming years in mycodermic medication.

These grand achievements give us hope and promise of even grander contributions to the weal of mankind before the close of this final decennium of nineteen hundred.

Medicine has made the Pontine marshes of ancient Rome, the jungles of darkest Africa, comparatively safe to the traveler, and the valleys of the Nile and the Mississippi are no longer menaces to health. Quinine, eucalyptus, picrate of ammonium, and tasteless Fowler's solution have augmented human happiness and spread the commerce of civilized nations beyond computation. The world applauds its Livingstones and Stanleys, yet omits its meed of praise to those who have made their discoveries and the fruition of them a possibility.

Thus you see medicine ever advances toward its final goal—the health and consequent happiness of mankind. Thus we see, though with contracted view only, from this cursory survey, how much the past few years have done in the direction of medical advance. Thus we see that this great profession, the uplifter, friend, and benefactor of mankind, though the jest betimes of the world's great wits, continues its too-little-appreciated benefactions. Its votaries, forsaking or ignoring common routes to glory for paths of duty, have gone on ameliorating human misery and conserving and saving limb and health and life, and, through health, the welfare of the State; deserving, but not receiving, the conqueror's word of praise; marking the march of medicine with blessings on mankind, and deserving the world's gratitude far beyond what the world has ever recognized. In the fierce contentions of mind with mind and strain of modern business and professional life, and in man's contests with Nature and battle with the elements, medicine preserves and fortifies man's organism for the fierce fray, that he may fight on and conquer success, prosperity, and happiness for himself, for his family, and for the commonwealth.

When will a gratefully appreciative nation erect suitable monuments to our workers, our warriors, and our martyrs in the glorious cause of human happiness and human progress? For without health, man is nothing. In the struggle for the survival of the fittest he falls in the fight for existence, and becomes the victim rather than the vanquisher of his environment, and nations do likewise.

The world owes medicine much. When will it ever repay even half the debt? It will be when "isms" and "pathies" in practice are dead; when the now vanishing days of sectarian theories shall have passed away forever; when a unified profession practicing in the faith and teachings of true science shall have its legitimate combined influence over all of the people. It will be when students are taught a sufficient length of time (five years or more) in our medical colleges to enable them to master the principles of medical science and the precepts of medical practice, and to practically appreciate the ethics of their profession. It will pay back the debt in tributes of honor and glory, and adulation, and in monuments of marble and bronze, when human progress shall have reached that high stage of evolution when there will be more renown for him who saves life in the name of charity than for him who takes it in the name of national glory; more glory for him who builds up than for him who tears down the fabric of human happiness. In that on-coming day of human enlightenment the true physician will be esteemed above the warrior. Nations will give him merited places of honor in ministry, in cabinet, and in council, and on tented and battalioned fields. Then it must needs come that the physician will assert and secure his peerage among the people. History will then give medicine an illumined and illustrious niche in her temples of enduring fame, and the glorious deeds of her worthy sons will be justly immortalized in the poet's song. America will then render long-neglected memorial justice to her great medical benefactors. Bronze and marble forms of her great dead doctors, who have dared and done more than warrior or statesman for the public weal, will adorn her public parks and grace her public halls. The enlightened citizen standing beneath the dome of the nation's capitol, as he looks upon the immortal names there inscribed, will see those of America's great physicians written alongside of her other philanthropists, her jurists, and her presidents. American philanthropists will read their names there inscribed "in letters of gold and in pictures of silver," and revere their memories as the patriot now reveres the memories of Washington, of Jefferson, of Franklin, and of Patrick Henry. The names and remembrance of Benjamin Rush, of Ephraim McDowell, of Marion Sims, of Beaumont, of Crawford, of Jackson, of Bowditch, of Agnew, of Gross, of Wells, of Long, of Eve, of Gaston, of Marcy, of Mitchell, and of Mott and their good work for the weal of the world will be as immortal as those of our Clays, our Websters, and our Bentons. Every patriot will revere them, because they have contributed to conserve the health of the public, realizing that in the good health of a people is their happiness, their physical, political, mental, and moral power, and to be without this power is to be as pygmies among the nations, puny in prowess, and pitiable in all that makes man or nation great and good.

Bibliography.

Latest editions and translations are intended where not otherwise designated.

Work of Medicine for the Weal of the World. By C. H. Hughes. *Alienist and Neurologist*, xiii, p. 15.

Influence of the Nervous System on the Renal Functions. By Francisco Spallitta. *Il Pisani Gazzetta Secula*, Palermo, 1888. Trans. by Workman, *Alienist and Neurologist*, x, pp. 574 to 608.

Lancereaux. *Leçons de clinique médicale.*

A Plea for the Neurotic Theory of Gout. By Dyce Duckworth, M. D., Edinburgh. *Brain*, April, 1880.

Huxley. Address on Biological Science, International Medical Congress, 1881.

Osler. *Practice of Medicine.*

Goodell's *Lessons in Gynæcology.*

Nerve Counterfeits of Uterine Disease.

Archives de physiologie, April, 1894.

Hughes, C. H. The Nervous System in Disease. *Alienist and Neurologist*, ix, 3, p. 361.

Hughes, C. H. Neural and Psychoneural Factor in Gyneciac Disease, p. 251 *et seq.*

Hughes, C. H. Hæmophilia. *Alienist and Neurologist*, viii, p. 378.

Hughes, C. H. The Relation of the Nervous System to Cholera. *Alienist and Neurologist*, No. 6, p. 44.

Obersteiner. *Anatomy of the Central Nervous Organs.*

Anatomie médicale du système nerveux. Par Ch. Féré.

Edinger, Ludwig. *Structure of the Central Nervous System.*

Fothergill, Milner. *The Maintenance of Health*, 1875.

Fothergill, Milner. The Neurosal and Reflex Disorders of the Heart. *Alienist and Neurologist.*

Hughes, C. H. Reflex Cardiac Gangliopathy. *Alienist and Neurologist.*

Tilt, John E. *Diseases of the Menopause in Woman.*

Nouvelle iconographie de la Salpêtrière, June, 1891.

Ferrier. *Functions of the Brain.*

Lewachen, Serge. Influence of Nerves on the Secretion of Lymph. *Alienist and Neurologist*, viii, p. 422.

The Corpus Striatum the Selection Center of Thermogenesis. *Alienist and Neurologist*, viii, p. 423.

The Four Heat Centers of the Brain. Isaac Ott. *Ibid.*

Ott, Isaac. *Physiological Researches.*

Allbutt, Clifford. *Visceral Neuroses*, London, 1884.

Schule. *Arch. für Psych. u. Nervenkrank.*, vol. xv, No. 3, p. 828, Nervous Dyspepsia, etc.

Chercheusky. Contributions to the Pathology of Intestinal Neuroses. *Rev. de méd.*, iii, 1884.

Fothergill, Milner. Gouty Neuroses of the Heart. *Ed. Med. Jour.*, xxx, p. 393.

Hirt, Ludwig. Translated by Hoch, 1893. *Diseases of the Nervous System.*

Hirt. *Diseases of the Nervous System.* Chapter viii, Vagus Neuroses.

Ormerod, J. A. *Diseases of the Nervous System.* Art., Hysteria, London, 1892.

Payne, R. L., Lexington. Hæmophilia. *N. C. Med. Jour.*; *Alienist and Neurologist*, ix, p. 290.

Nervous Origin of Rheumatoid Arthritis, by Archibald G. Garrod, *Lancet*, Nov. 26, 1887; and Discussion by Dyce Duckworth, Ord, Buzzard, and others, Royal Med.-chir. Soc.

Hughes, C. H. Note on the Hysterical Concomitants of Organic Nervous Disease. *Alienist and Neurologist*, July, 1892.

Luys. *The Brain and its Functions*, 1887.

Hughes, C. H. The Epidemic Inflammatory Neuroses, or Neurotic Influenza. *Alienist and Neurologist*, April, 1892.

Babes. The Microbes of Influenza. *Centralblatt für Bacteriologie*, 1890.

Cornil et Chantemesse. *Traité des bactéries*, ii, pp. 563 *et seq.;* translated as Microbes of Influenza, *Alienist and Neurologist*, xiii, p. 310.

Report on Tuberculosis. By P. H. Bryce, M. A., M. D., Sec'y Prov. Bd. of Pub. Health, Toronto, Feb. 15, 1894.

The Hystero-neuroses, a review. By A. Hughes Bennett. *Brain*, ii, pp. 68 *et seq.*

Innervation des vaisseaux cutanés. Dastre et Morat. *Archiv. de physiol.*, mai, aout, 1879.

Visible Muscular Conditions as Expressive of States of the Brain and Nerve Centers. By Frank Warner, M. D., London. *Brain*, part xii, pp. 495 *et seq.*, and *Brain* for July, 1881, same author and subject.

Vulpian's Lectures, *Le Système vaso-moteur*, 1875.

The Rôle of the Nervous System in the Causation of Vitiligo. By Ohmann-Dumesnil. *Alienist and Neurologist*, vii, pp. 298 *et seq.*

Brigham on the Brain. Utica, N. Y., 1852.

Mental Cultivation and Excitement, Amariah Brigham, Hartford, Conn., 1844.

Neuropathic Conditions of Cancerous Degenerations. Editorial, *Alienist and Neurologist*, 1885, p. 281.

Golgi. Fine Anatomy of the Central Nervous System. *Revista sperimentale.* Translation, *Alienist and Neurologist*, v, pp. 236 *et seq.*

Sir W. Gull's *Memoir on Myxœdema.*

Haeckel. *Evolution of Man.*

Holden and other standard *Anatomies.*

Mills. *Animal Physiology.*

Gorton. *The Monism of Man.*

Brown-Séquard. *Lecture on Nerve Force*, Boston, 1874.

Landois and Sterling. *Text-book on Human Physiology.*

Rush, Benjamin. *Medical Observations and Inquiries on Diseases of the Mind*, 1812.

Bowlby. *Injuries and Diseases of the Nerves.*

Dalton. *Human Physiology.*

Seguin, E. *On Education*, 1880.

Carus. *The Soul of Man.*

Maudsley. *Body and Mind.*

Bain. *Mind and Body.*

Beard. *Neurasthenia.*

Spencer, Herbert. *Principles of Psychology.*

Sundry articles in *Journal of Comparative Neurology*, by Dr. Herrick.

Lightning Stroke followed by Acute Bright's Disease, reported by J. E. Free, M. D., *Phil. Med. and Surg. Rep.;* abstracted in *Alienist and Neurologist*, viii, p. 664.

The Relation of Teeth and Hair Failure to Brain Strain. By C. H. Hughes, *Med. Reg.*, abstracted in *Alienist and Neurologist*, viii, p. 250.

Experimental Degeneration of the Brain and Cord. By Bianci and D'Abundo, Naples, Italy. *Alienist and Neurologist*, viii, pp. 163 *et seq.*

Recent investigations of Kölliker, Lenhossék, Marie, Piersol, Ramón y Cajal, and Schäfer.

The Physics of Electrotherapeutics.—Private instruction in this branch of physics is announced by Mr. H. Newman Lawrence, of No. 34 West Nineteenth Street.

Original Communications.

PALUDISM IN CHILDREN IN NEW YORK.*

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THE rarity of true paludism in New York and the fact that children do not appear very susceptible to malarial poisoning renders this subject a somewhat difficult one for accurate study in this locality. The present notes are based upon an analysis of fourteen cases in which the diagnosis was based, not upon clinical manifestations, but upon the presence of the plasmodium in the blood. Dr. Koplik has recently presented an excellent and thorough study of this subject. The ages of my cases were as follows: Six months, eight months, eleven months, two years, three years (two cases), four years, five years, six years (two cases), ten years, twelve years (two cases), fourteen years. In order to bring out some of the clinical features, a few histories will be submitted:

Thomas M., aged five years, 343 East Thirty-third Street, October 11, 1893. No history of any previous illness. Two weeks ago he fell out of a small wagon while playing on the street. This was followed in about two hours by vomiting, and that night he was seized with a fever preceded by chilliness. Since then he has had a fever every other day. He had a chill yesterday, and vomits after the chills. His bowels have been loose and watery for the past twenty-four hours, having had eight movements. He takes nourishment well, but the tongue is covered with a thick white coating. No enlargement of spleen Temperature, 100·2° F.; pulse, 114. Diet regulated and bismuth and pepsin administered to correct intestinal fermentation.

October 15th.—Gastro-intestinal symptoms improved. No more vomiting and one movement from the bowels daily. The fever ceased for two days, but returned yesterday. Has complained of a cold feeling to-day. On October 16th he had had chilly sensations and on October 17th at 4 P. M. there was a distinct chill, followed by a slight fever. An examination of the blood now showed a few malarial plasmodia. On October 18th he was brought to Demilt Dispensary at 2 P. M. and the temperature was 99·6° F. Almost at once his mother called my attention to the fact that he appeared to be having one of the "cold" turns. Inspection showed the lips and hands to be quite cyanotic, but no rigors. Ten minutes after his first temperature was taken, the thermometer was again inserted under the tongue and found to register 102·4° F. A drop of blood was drawn from a finger during the chill and about half the globules in the field showed malarial organisms. Most of the organisms in the corpuscles showed many pigment spots, but some only one or two. There was a slight enlargement of the spleen. Bowels costive. Quinine, eight grains daily, was ordered.

20th.—Temperature, 98·5° F.; pulse, 100. Yesterday had a very slight chill and fever in the evening. Brighter and better to-day. Quinine continued.

25th.—Temperature normal and appetite good.

29th.—No fever and complete recovery, but anæmic. Quinine stopped. Iron was administered for a few weeks, during which there was no return of malarial symptoms.

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* Read before the Medical Society of the County of New York, April 23, 1894.

Agnes M., aged three years, Third Avenue and Forty-sixth Street, March 20, 1894. The mother had lost three children, two dying of pneumonia during infancy. The third, eleven months old, had an intermittent fever for four weeks, and was said by a doctor in attendance to have died of "malaria." On March 18th, after playing on the street, the child was seized with a high fever, which continued through the 19th, with sweating in the afternoon, upon which the fever abated somewhat. Temperature, 104·5° F., axilla; respiration, 50; pulse, 140. No appreciable enlargement of the spleen. Slight cough. Lungs negative. A blood examination showed the pigmented bodies of the plasmodium with some segmentation. Acetanilide, one grain every three hours, was ordered.

March 22d.—Temperature, 98° F. Fever left upon second dose of medicine. She played around yesterday with no fever. No plasmodium found.

28th.—Temperature, 98° F. Appears well.

April 13th.—Has had no return of the fever, having been perfectly well.

The following two histories show the disease as it occurred in young infants:

Alice C., aged eight months, No. 311 East Fortieth Street, October 24, 1893. Baby is healthy and has always been on the breast. She spent last summer at Mount Vernon, and during the first week in August grew fretful and averse to nursing. After a few days of these indefinite symptoms, she had a chill lasting about fifteen minutes, followed by a fever and cold sweat. Medicine was administered for two weeks, which the doctor said contained quinine, and there was no more fever, but some failure in general health. The mother returned to New York on October 6th, and on October 8th the baby was noticed to get cold for about half an hour, followed by fever and sweating. There was no rigor, as in the first attack. She then had mild daily attacks, but about October 20th the fever grew worse, preceded by a much milder cold stage. The fever appeared to get higher and last longer each day. The baby was very anæmic and iron was given, but no quinine.

October 28th.—Baby no better. Daily fever. A blood examination showed the plasmodium. Quinine, six grains daily, was ordered.

November 2d.—Temperature, 98° F., rectum. No return of fever, but baby is weak and anæmic. Hæmoglobin, fifty-five per cent., and no plasmodium.

14th.—No more fever and much better in every way. Quinine discontinued and iron given.

February 27, 1894.—The mother brings the baby for a slight cold and states there has been no return of any malarial symptoms.

Mary H., eleven months, No. 379 First Avenue, March 22, 1894. The mother has lost three children—one with pneumonia, one with diphtheria, and one in convulsions. The baby is on the breast and healthy, with the exception of certain periodic attacks which began at the age of six months. In them the baby stops breathing, gets black in the face, with eyes open and staring, evidently unconscious, with hands and feet cold. Water is thrown in the baby's face and it comes out of the attack in from twenty to thirty seconds. The mother says a former child had similar attacks, beginning at the age of eleven months. The above account given by the mother points to laryngismus stridulus. The present illness began with vomiting on the evening of March 21st, followed by fever. There are no local symptoms. Temperature, 104° F.; respiration, 48; pulse, 150. An examination of the blood showed the presence of the plasmodium, not abundant, and some eosinophile cells. Acetanilide, half a grain every three hours, was given.

March 24th.—Temperature, 100° F. No more vomiting. Fever broke March 23d. No enlargement of spleen.

27th.—Temperature, 98·8° F. Baby much better. No return of fever. Nurses and sleeps well. Blood shows no plasmodium. Acetanilide continued.

April 13th.—Has had no fever and been well except one or two of the periodic attacks described above.

Four of the cases recovered without the administration of quinine, and a fifth continued well for a week, when it passed out of observation. When the malarial influence is not intense and continuous there appears to be a spontaneous tendency to recovery, in some cases at least. The following history illustrates this point:

Paulina N., aged six months, 489 Second Avenue, January 18, 1894. Five days ago the baby was seized with fever, preceded by cold hands. The temperature lasted two days before abating. To-day she was seized with a fever for the second time. Temperature, 104° F. Plasmodium found. No enlargement of spleen. Small doses of aconite given.

January 19th, 20th, 21st, and 22d.—No fever.

25th.—Blood examined. Eighty-five per cent. hæmoglobin and only one extra-corpuscular plasmodium found.

February 5th.—Blood examined and negative.

15th.—Has continued well, with the exception of a slight cough, until two nights ago, when the hands and feet became cold, followed by a warm skin. She seemed sick the following day. Last night her hands and feet again became cold. To-day, temperature 101° F. at 3 P. M. Aconite given.

16th.—No temperature.

17th.—Does not appear very well, but no temperature.

April 13th.—Has been perfectly well since she was last seen at the dispensary. No temperature, but a slight cough.

The statement at the beginning of this paper that paludism is not common in this city is borne out by the fact that these fourteen histories were obtained from a very large number of cases extending over a year and a half, principally at Demilt Dispensary. Six of the cases had recently been brought from malarious districts in New Jersey and Long Island. Dr. Koplik states that in all of his cases decided by the blood examination to be malarial a history of sojourn outside the city limits in the adjacent country districts could easily be obtained.

Almost any bodily disturbance in early life may simulate malaria if one is looking for this condition. In infants and very young children the regular chill is usually replaced by cold hands and feet or a general pinched appearance. The sweat is likewise not marked. The fever is, hence, the principal manifestation, and it is often difficult to establish the sharply marked periodicity noted in the books. Several conditions, some grave and others trivial, are often mistaken for paludal infection. A form of tuberculosis in children, with chills and irregular fever and without marked pulmonary symptoms, presents an appearance closely resembling malaria.

William M., aged eight years, was brought to me with a history of fever and sweating, with an occasional cold stage. There was some cough, and auscultation showed mucous râles at the base of both lungs, but hardly fine enough to account for the symptoms. Temperature, 103·8° F.; pulse, 138. A blood examination showed hæmoglobin eighty per cent. and no plasmodium. An expectorant only was given. For the next few days he had a chill, followed by fever and sweating at about the same hour—6 P. M. Examinations showed no plasmodium. These symptoms continued about the same for ten days, the daily temperature, when taken, varying from 99·8° to 101·5° F. In spite of treatment the bronchitis seemed to grow worse, with more expectoration, and slight tubular expiration was now noted at the apex of the right lung. An examination of the sputum showed the tubercle bacillus. For over a month this case could have passed for an almost typical malarial attack in the absence of the discovery of the bacillus. Later on, the physical signs alone would easily have established the diagnosis.

I believe a form of intestinal fermentation and catarrh is a condition most often mistaken for malaria in early life. This is accompanied by languor, coated tongue, abdominal or epigastric pain, headache, and a more or less irregular fever, doubtless caused by the absorption of ptomaines. Such symptoms may easily assume somewhat of a periodic type.

Joseph C., aged seven years, was brought February 9th complaining of headache, pains in his limbs, with chills up and down his back and some fever. Sleep very restless at night. No appetite. Occasional vomiting. Bowels alternately costive and loose. February 11th: No improvement and complains of feeling very tired. Blood examined and no plasmodium found. Small doses of calomel, followed by nux vomica and pepsin, with careful regulation of diet, produced marked improvement within a week's time. If such a case is allowed to run on unchecked, anæmia and general prostration produce a similar picture to true malarial cachexia, but dosing with quinine only aggravates the condition by increasing the digestive disturbance. A young child with a certain amount of gastro-intestinal fermentation and insufficiently clad or exposed to cold is very apt to develop subacute rheumatism, with slight inflammation of muscles and fascia and irregular fever, which again may simulate malaria. A certain form of amygdalitis, in which muco-pus forms deep in the follicles, but is seen only as pin points on the surface, may be overlooked upon a superficial examination, and the chills, fever, headache, and constitutional disturbance be referred to malarial influence. The mild typhoid fever that children sometimes contract, true walking cases, with no abdominal symptoms, are liable to be incorrectly treated for malaria. There is a condition often seen in badly cared for children in tenement houses to which the term civic malaria may be applied; but the term is a bad one as implying a paludal infection. A combination of bad food and foul air may easily induce fever and general depression of vitality, but the plasmodium is not found, and quinine has no effect save from a tonic influence when administered in small doses. In making a diagnosis I do not believe that enlargement of the spleen can assume the same prominence in children as in adults. Enlargement may quickly take place from the less resistant quality of the capsule, but the size may as quickly subside. The soft texture of the gland renders the enlargement at times difficult to detect. I have not relied upon percussion, but upon deep palpation, placing the right hand below the twelfth rib on the back, with the fingers of the left hand upon the abdomen, and then bringing them in apposition. The diagnostic value of splenic enlargement in malaria is weakened, inasmuch as it occurs in many diverse ailments of childhood, such as rickets, tuberculosis, syphilis, diphtheria, typhoid fever, and other infections. Before making a diagnosis of paludism, especially in a non-malarial neighborhood, we must make a thorough search for all other possible sources of the disturbance under investigation. We must remember the unstable condition of the vaso-motor centers in early life that renders fever, often irregular and intermittent, a constant symptom of very diverse local and general conditions. I have seen chills and fever from an otitis media in a child who complained more of his head than his ear, although an examination of the latter organ showed the tympanic membrane to be bulging, and a small incision, of course, relieved all symptoms. Quinine would have done much damage. If a careful and prolonged search does not settle the question, the diagnosis must finally rest upon an examination of the blood for the plasmodium. In order to learn the comparative frequency of true malaria in children and adults in places where it is seen oftener than in this locality, I wrote to Dr. William Osler, of the Johns Hopkins Hospital, Baltimore, who kindly sent the following reply: "Paludism is not very common here in children as compared with adults. Our statistics in the wards are as follows: Of the two hundred and forty-eight cases of malarial fever definitely determined to be so by blood examination, there were seventeen cases in children. The youngest case was a suckling aged two months who had it very severely and nearly died. The majority of the cases were quotidians or tertians, a few of the æstivo-autumnal form. We have no experience of the spontaneous cure of paludism in children; on the other hand, several of our worst cases have been allowed to become chronic. Splenic enlargement was present in all of the cases. We have learned to place more and more reliance, year by year, upon the blood examinations as the only positive criterion in the diagnosis of the disease. Obscure malarial influences we do not recognize specially." In making blood examinations I have had the kind assistance of Dr. Doty and Dr. Menzies at the Demilt Dispensary, and Dr. Brooks at the laboratory of the Post-graduate Hospital.

THE RELATION OF EYE-STRAIN TO CERTAIN FUNCTIONAL NERVOUS DISTURBANCES.*

By FRANK H. BARTLETT, M. D.,
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It has frequently been said, and perhaps in many instances with good reason, that specialists in medicine, particularly those interested in the development of some special theory, are inclined to be one-idea men. Everything connected with the practice of their profession is narrowed down to conform to that particular line of thought in which their minds happen to be directed. The over-enthusiastic oculist, always looking to the eye for the cause of all ills that flesh is heir to, examines his patients with this one idea in mind; and, expecting to find some defect which will account for the symptoms complained of, will, I am bound to admit, in nearly every instance discover something which, in his opinion, warrants him in assuring these patients that a properly adjusted glass or a few tenotomies will afford certain relief. An equally zealous gynæcologist may perhaps examine some of these same cases, and will almost invariably find some disturbance of the pelvic organs which he thinks warrants him in informing the patients that they need look no further for the cause of their troubles, and that a course of treatment, extending over a period of perhaps a few months or years, will certainly result in a perfect cure. These same enthusiasts frequently meet with cases in which they discover ocular defects of high degrees or extensive pelvic disturbances; and yet such patients do not complain of any of the various symptoms usually expected to accompany these conditions. They find in these cases a condition of affairs often difficult to reconcile to their pet theories, and in some instances can only account for it by the conclusion that these patients, by their apparent lack of appreciation of what is required of them, are depriving themselves of their just proportion of the enjoyment of poor health.

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* Read before the Medical Society of the County of Cattaraugus, February, 1894.

On the other hand, there are in the profession men who, perhaps, at some time have seen a few cases in which a pair of glasses, the tenotomy of an ocular muscle, the repair of a cervix, or the removal of an ovary have failed to afford any appreciable relief, and from their knowledge of these few isolated cases allow their prejudices to carry them just as far to the opposite extreme, and take the position that in spite of the fact that abundance of proof to the contrary can be brought forward, the whole subject is utterly devoid of reason in theory and of no possible value in its practical application.

These, gentlemen, are the two extreme positions taken by different members of the profession in the investigation and discussion of nearly every new idea brought forward for consideration; and such will probably always be the case so long as the world moves. I believe, however, that no subject of sufficient importance to provoke any extended controversy between men in these extreme positions is without a certain amount of true value, and that there is a middle ground from which such subjects can be viewed, letting cool, sober judgment take the place of the perhaps too extravagant views of the enthusiast or the unconquerable prejudices of the pessimist; and from this standpoint much sound reason in the theories will be discovered, which, intelligently applied, will bring about satisfactory results.

I am fully aware that in certain points the subject to which I direct your attention is a matter for controversy between members of the profession; also that so much already has been written in regard to it that whatever I may have to say may seem superfluous; still, I trust that a short time can be devoted by this meeting to the consideration of the subject of eye-strain and its relation to certain functional nervous disturbances, with a certain amount of profit to the writer, at least, if to no other person who has grace given him that will enable him to sit quietly through the entire reading of the paper.

In practice we all meet with cases who come to us complaining of headaches, disturbances of the digestive apparatus, insomnia, inability to perform their accustomed duties without great effort and fatigue, or of many other kindred symptoms for which we can assign no direct cause. In some of these cases marked hysterical symptoms may be manifested, the patient being thrown into a state of extreme nervous excitement from slight causes.

We generally find such patients to be much below par as regards general nutrition and the power of endurance. After examining them carefully, and finding no evidences of organic disease, we prescribe tonics, etc., advising, perhaps, systematic nourishment and exercise, and in connection with these complete mental relaxation, expecting that a persistence in this plan of treatment will, after a reasonable time, bring about satisfactory results. Many of these cases may respond to this treatment to our entire satisfaction, but in a large proportion of them we are disappointed at the results. Many of them show no progress, and others, while seeming to improve for a time, show a disposition to drop back to their original condition from slight causes or any relaxation in the systematic course of treatment which is being employed. In fact, there seems to exist in these cases some adverse influence which greatly lessens their powers of endurance and the ability to accumulate that supply of reserve nervous energy necessary to provide for occasions of extraordinary mental or physical activity. In other words, the *ordinary* demands for energy in these cases are as great, or greater, than the supply. This adverse influence, whatever it may be, makes unusual demands upon the nervous system, and consequently, by diverting from different organs their normal supply of nerve force, tends to impoverish them, and as a result the proper performance of their functions is very materially interfered with, favoring the development of many functional disturbances.

Now, if the foregoing conclusions are facts that can be demonstrated by experience; if this influence really is present in some cases, and the cause can be located and removed, we at once realize that by stopping this constant drain on the nervous system we restore the natural equilibrium of the different organs, and the patient is now in a much more favorable condition to respond to any plan of treatment that may be employed.

I believe fully that the truth of the foregoing theories has been established by practical experience, and that in many cases this influence does really exist. I also believe that in many cases of the class just described we find in eye-strain, resulting either from errors of refraction, want of equilibrium between the ocular muscles, or a combination of these two conditions, a very frequent cause for these excessive demands upon the nervous system, and a consequent waste of energy, the proper correction of which will in many instances be followed by most gratifying results.

Before proceeding further with the consideration of the ocular defects which may induce eye-strain, it is important that we understand what is generally accepted as a normal eye.

Perfect binocular vision is dependent upon that condition of the eyes in which the relations between the curvature of the surfaces of the cornea and lens in all meridians, the length of the eyeballs, and the adjustment of the ocular muscles are such that all rays of light entering the eye from a distance beyond twenty feet are brought to a focus at exactly the same point on the retina of each eye, with no effort except that exerted by the ocular muscles in directing the eyes toward the object and fixing them in this position. This movement and fixation of the eyeballs should be accomplished with such an equal distribution of tension that no excessive strain is required of any muscle or set of muscles to overcome undue power exerted by opposing muscles. In other words, normal vision means the ability to see objects at a distance *clearly* when both eyes are in a state of rest.

Deviations from this theoretically normal standard are of great frequency, and, within certain limits, may exist with no apparent ill effects. The question as to how great the departure from this standard must be to produce evidences of eye-strain is one much discussed at present and will probably never be settled, some oculists correcting the slightest defects discovered, while others believe that a considerable degree of error can be ignored without inconvenience to the patient.

It would seem that no definite standard which will guide us in the correction of these ocular defects can ever be arrived at. Each individual case must be studied by itself, taking into consideration the temperament and general make-up of each patient. The correction of very slight defects will in some instances be followed by most gratifying results; while, on the other hand, every oculist not infrequently discovers errors of refraction or muscular insufficiencies of marked degree, and is surprised at the slight annoyance given by them to the patients. Gynæcologists, also, frequently meet with cases of extreme laceration of the cervix or perinæum, or displacements of the pelvic organs, and yet these patients seem to suffer little from them.

As a rule, however, we find such patients to be persons of good physique, full of vital energy, well nourished, having great powers of endurance, and with nervous systems which are not easily impressed by occasions of extraordinary mental or physical activity. Such persons have usually inherited strong constitutions, and the different functions of the organs are performed with such precision that, in the matter of waste and repair, the balance is always greatly in favor of the accumulation of an ample supply of reserve strength or vital energy; and, while the existence of an ocular defect or of pelvic disturbances always necessitates an excessive expenditure of energy, all conditions are so favorable in these cases for the accumulation of reserve force that little or no impression is made upon the nervous system as a result of such demands so long as a condition approaching perfect health continues. Let such a person, however, become debilitated by a protracted illness, or from any cause that will result in great loss of vitality and general muscular strength, then these reflex symptoms, which so often accompany and are induced by eye-strain or pelvic disturbances, will in very many instances manifest themselves; and, furthermore, particularly in the case of eye-strain, while such a person may seem in every other respect to have regained his former strength, these evidences of eye-strain will persist, he now having lost the ability to overcome this trouble, which before this illness he could do with apparent ease.

The persistence of these symptoms of eye-strain in such cases can perhaps be better understood when we remember that, where certain ocular defects exist, the eyes are under a constant strain every moment when not closed, and little opportunity is afforded the ciliary or ocular muscles for rest or the regaining of their former strength. To the other muscles of the body, on the contrary, many opportunities for rest are afforded during the day, either by a complete relaxation at different times of certain muscles, or being relieved of a portion of their work through the combined action of other muscles at times when overtaxed. A large proportion of the cases that come under the observation of an oculist present conditions quite the opposite of those just referred to.

Many of these patients come for treatment, referring their troubles directly to the eyes, and yet in very many instances examinations reveal but slight defects. The correction of these slight defects, however, frequently affords relief beyond expectation. We usually find in these cases conditions as regards strength and endurance quite different from those observed in the type we have just considered. These patients, as a rule, are never robust, seem poorly nourished, and have inherited nervous temperaments highly sensitive to slight impressions. The accumulation of strength in these cases at best barely meets the *ordinary* demands of life, and, as a consequence, their powers of endurance under favorable circumstances being limited, they find themselves unable to meet those inevitable exigencies of life which call for an extraordinary expenditure of mental and physical energy, without not only utilizing all surplus strength, but, in addition to this, so to speak, drawing on the future; and, as a result, when the occasion is past, they find themselves in a condition of exhaustion from which it may require days or weeks of rest to recover.

In these cases, the patients having no surplus strength from which to draw, an excessive demand for energy in any particular direction can be met only by diverting to this purpose more or less of that normal supply of energy which should at all times be given to the different organs and is necessary for the maintenance between them of a perfect equilibrium in the performance of their various functions. Should this excessive and unnatural outlay of strength or energy in any direction (though it may for a time seem of little importance) continue for any extended period, its evil effects will manifest themselves by evidences of an improper performance of these functions, by reason of the continued withholding from various organs of their normal stimulus. Thus the *facilities* for generating nerve force gradually become lessened, and the result is a general lowering of vitality. The resources for strength are now never quite equal to the usual requirements, and there exists a condition of affairs extremely favorable for the development of any or all of the neurotic disturbances generally known as functional nervous diseases.

Having, as I trust, made myself clear on the foregoing points, I am now led to the proposition that eye-strain will in many cases induce or at least contribute toward the development of functional disturbances, and that the conditions most favorable and perhaps necessary for their development are an impressionable nervous temperament and a want of resistance in the individual in whom ocular defects may exist.

It is not my purpose at this time to go into a detailed description of the different visual disturbances which are known to induce eye-strain, nor do I wish to weary you by presenting statistics bearing upon the subject. I simply desire to call attention in a general way to some of the most important of these defects, devoting only sufficient time to them to establish the fact of their possible relationship to this subject of functional nervous disorders.

The more frequent causes of eye-strain are perhaps hyperopia and astigmatism. In hyperopia, as you already know, the eyeball being too short or the cornea and lens too flat, parallel rays of light can only be focused upon the retina by bringing into action, by means of the ciliary muscle, what is known as the power of accommodation. This, in a normal eye, is only brought into action at such times as the eyes are used for near work or looking at near objects. At all other times, when directed toward distant objects, the eyes (if perfect) should be practically at rest. The vision of a hyperopic eye, if the defect be of not too high a degree and the patient not over forty or forty-five years of age, may be normal; but perfect vision with such an eye can only be maintained by calling into requisition at all times this accommodation, thus subjecting the eye to a constant strain; and we can readily see that a much greater strain must become necessary for near work. Such an eye can never be at rest, the ciliary muscle being brought into action at all times both for near and distant vision.

In astigmatism we find a variation in curvature of the different meridians of the cornea, and as a result rays of light entering the eye at these different meridians can not be brought to a focus at the same point. Distant vision in an astigmatic eye is usually more or less interfered with. A certain amount of astigmatism, it is believed, can be overcome by the action of the ciliary muscle; but in cases of more than a very slight degree no action on the part of the eye can to any extent improve the vision. In astigmatism a clear-cut image of an object is at all times impossible, but there is on the part of the eye always an unconscious effort to get better vision. This effort, together with the nervous disturbance caused by the blurred image, keeps up a constant strain, greatly increased in near work.

In our description of a normal or ideal eye perfect binocular vision was made one of the conditions necessary for perfect eyesight. This can only be accomplished by an equal distribution of tension, so that at all times an accurate fixation of the eyeball may be maintained with such a perfect balance between different ocular muscles, or sets of muscles, that no excessive strain will be put upon any muscles because of undue strength in those that oppose them. In all cases in which there exists a lack of this proper balance between ocular muscles the eyeballs tend to turn toward the stronger muscle, and in instances where a very great departure from a normal balance is present the deviation amounts to a marked squint. It is not to these cases of decided squint that we refer, however, in speaking of the relations of muscular insufficiencies to eye-strain, for we must remember that in such cases the patient, while fixing with one eye, is able to suppress the vision of the squinting eye, thus avoiding very distressing double vision, which would otherwise exist at all times.

The insufficiencies causing symptoms of eye-strain are those in which either the deviation is just sufficient to cause diplopia, or double vision is only avoided by an excessive effort on the part of the weaker muscles. In such cases confused vision results, or objects are only seen distinctly by imposing a constant unnatural strain on the weaker muscles, and, as in the case of refractive errors, the result is a great waste of energy.

Errors of refraction can only be corrected by the adjustment of a proper glass, and while there exists a considerable difference of opinion among oculists as to how great the error must be to require correction, I believe that all agree that these conditions in a very large percentage of cases cause eye-strain, and certain reflex symptoms may follow as their result. In regard to insufficiencies of the ocular muscles, however, there is a much greater diversity of opinion, some believing and teaching that all muscular insufficiencies should be ignored, while others, representing the opposite extreme, believe that in these muscular defects they find a cause for nearly all nervous reflex symptoms. This question is one which it seems to me should be investigated from this middle ground before referred to, and I believe that many of our conservative men of to-day are finding that a large number of cases which have heretofore received little or no benefit from simply the correction of refractive errors are being greatly relieved by treatment directed toward these muscular insufficiencies.

The correction of insufficiencies of ocular muscles, if of but slight degree, may be brought about by the adjustment of prisms (the base of the prisms placed over the weak muscles, taking off a certain amount of strain from those muscles). Prisms, however, have no curative effect, and do not tend in any way to strengthen weak muscles. They usually must be constantly worn if relief from their use is to be expected. In fact, the manner in which the strain is taken away from a weak muscle by a prism is by so bending rays as they enter the eye that more work is put upon the opposing muscles, and if worn constantly the tendency is toward an increased development of strength in the strong muscle by reason of its increased exercise, while the condition of the weaker remains about as before, thus resulting in a still greater difference in the relative strength of these muscles when the prism is removed. We find in practice, however, notwithstanding this tendency just referred to, that in many cases weak prisms are worn by patients year after year, giving perfect relief, or in some instances after having by their use afforded weak muscles a period of rest can be dispensed with, the patient experiencing no further annoyance from the previous trouble. In cases in which the defect is of a high degree, prisms, as a rule, afford little or no relief. Such cases require treatment that will restore the proper equilibrium between these muscles by either strengthening weak muscles or diminishing the strength of such as are manifestly too strong.

This may be accomplished either by a division (or tenotomy) of the strong muscles, or, when the defect seems to be altogether due to a lack of normal power in the weaker muscles, by the operation of advancement of the tendons of these muscles. This operation is done by separating the muscle from its insertion, and so drawing it forward and retaining it in this position by means of sutures, that it will attach itself to the eyeball at a point in *advance* of its former insertion; thus giving the muscle a much better purchase on the eyeball, thereby increasing its power of rotation.

In what has been written in regard to this subject an effort has been made to avoid, so far as possible, the unnecessary use of technical terms; and I trust I have expressed myself with sufficient clearness to establish in the minds of some who have listened a belief in the possible existence, in some cases at least, of a relation between eye-strain and certain functional nervous diseases.

Before leaving the subject I wish to impress upon you, first, the fact that while in many instances eye-strain may be the direct cause of reflex nervous troubles, ocular defects *do not exist in all nervous patients ;* and furthermore, in many cases, even if discovered, little or no relief will result from their correction. In such cases we must look further for the cause of the difficulty. I am firmly convinced, however, that the facts at my command warrant me in the statement that in no case manifesting these nervous symptoms which has failed to respond to ordinary treatment, employed for a reasonable period, is the investigation complete until an examination of the eyes has determined as to the presence or absence of ocular defects; and should such defects be discovered, all indications for proper treatment have not been fulfilled until they have been corrected.

It must also be borne in mind that the treatment of these cases does not end with simply the adjustment of glasses or the performance of a tenotomy; as has already been intimated, the relief of eye-strain, by stopping one of the leaks through which much energy is lost, places the patient in a much more favorable situation than before for responding to appropriate treatment directed toward the improvement of general nutrition and the accumulation of surplus strength. My observation in a number of cases of this class has led me to believe that in the general treatment of these patients more favorable progress may be expected if less reliance is placed on medication and more attention given to a liberal supply of nourishment, plenty of rest, mental relaxation, and, in connection with these, a judicious amount of regular systematic exercise.

The over-enthusiastic theorist will doubtless meet with many disappointments in this matter of eye-strain; but I am thoroughly convinced that the combined experiences of those now interested in its investigation will bear me out in the assertion that while the correction of ocular defects will not in *every one* of these neurotic cases result in a perfect cure, a very large proportion of them will be afforded sufficient relief to fully repay both patient and physician for all time devoted to this subject.

THE TREATMENT OF HÆMORRHOIDS.*

By CHARLES B. KELSEY, M.D.

In the discussion of a question such as this, clinical fact is of so much more value than any theories, that I must ask pardon in advance for confining what I have to say almost entirely to the report of personal experience.

At the clinic for diseases of the rectum at the New York Post-graduate Hospital the following advantages are claimed with some positiveness for the clamp and cautery operation over all other methods for the radical cure of hæmorrhoids:

1. The least pain.
2. The quickest recovery.
3. The least vesical and general disturbance.

That the results as to radical cure and safety from every sort of accident are fully as good as after the use of the ligature has been so often proved, and is at all times so easily capable of proof, that here it need only be touched upon. My personal experience with the operation extends over about ten years, during which I have used it exclusively without ever having had a serious accident or complication of any sort. A single case of failure to cure, or of secondary hæmorrhage, or of any grave accident which could be attributed to any defect in the operation itself, and was not equally liable to occur with any other method of treatment, would have caused its abandonment and a return to the ligature long ago. But there have been no accidents, and the results have invariably been so satisfactory as to leave nothing to be desired.

This statement is made simply to offset the statement made by Allingham years ago, that the clamp and cautery is at least six times as fatal as the ligature—a statement frequently repeated, as often challenged, and for which neither of the Allinghams seem ready to furnish any proof, in spite of the fact that when last repeated (by which time the figure had grown to eight instead of six) three public requests for proof appeared almost simultaneously in British journals.

As to whether the three claims made for this operation are justified by facts and are not matters of theory based upon personal preference for one method over another, the results of the method at the public clinic will best show.

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* Prepared for the American Medical Association at its forty-fifth annual meeting.

For four years and a half it has been the only operation used. During that time about one hundred and fifty cases have been operated upon. There has been no case of hæmorrhage, failure to cure, failure in the wounds to heal kindly, and but one case in which the subsequent use of a bougie for contraction was necessary. In that case the contraction was entirely overcome by the patient himself in a few weeks and the bougie abandoned.

The majority of the patients enter the hospital an hour or two before the operation and are etherized without previous preparation. The bowels are moved by a cathartic forty-eight hours after the operation. The use of an anodyne or of the catheter is equally rare and both are almost unknown. The patients are allowed to dress and be about the house as soon as they please, and this is generally on the third day. Some of them stay in the house till the end of the first week and can be shown to the class at the weekly clinic following the operation. Many of them go out on the fourth and fifth days. Some of them will report as out-patients at the clinic at the end of the second week, and the vast majority are never seen after that date.

My reason for giving the results of public work rather than of private practice, although they are the same, is that the former can be verified at any time by any member of the profession who takes sufficient interest.

My personal experience with the different methods of treating hæmorrhoids may be briefly summarized in the advice given to the students when discussing this question at this clinic, which is as follows:

If you wish to radically cure your patients with the least possible pain, loss of time, confinement to the house, and risk of accidents—use the clamp and cautery.

If you wish to accomplish the same result with no more risk, but with more pain, more local and general disturbance, and longer confinement—use the ligature.

If you wish to take an hour to do what can as well be done in a minute, and gain nothing by it in results—use Whitehead's operation.

If you wish a palliative treatment which is not a radical cure except when sloughing is produced, which is often attended by accidents which will cause great annoyance to yourself and the frequent desertion of your patients, and which is not free from very grave risks—use carbolic acid injections.

In common with the rest of the surgical world I have spent much thought in trying to find some way of radically curing hæmorrhoids which should be surgically satisfactory on the one hand, and free from the fear which the word "operation" always carries to the human mind on the other. My experience with carbolic-acid injections has been the same as that of all other *surgeons*. When it is radical it is attended by more pain and risk than any of the recognized operations; and when the pain and risks are escaped it is only palliative. But the risks of pain, burrowing, and ulceration can never be eliminated by any use of this method. For many years I have had a chance to note the results of one of the most popular and successful of the irregular practitioners who follow this method, and his results are the same as those of all surgeons of standing who have ever tried it. Some of his patients are satisfied and sound his praises—many come to me after abandoning his treatment.

To escape the evils of carbolic acid I have made a series of experiments with galvano-cautery puncture which have never been published. My idea was to inflict a definite localized puncture with a hot iron exactly as in former days we used to cure nævus of the face in a child with a shoemaker's awl heated in an alcohol lamp. I thought that by this means I could cause a definitely circumscribed and limited slough, and that by enough of these I could destroy the tumor without causing pain enough to confine the patient to his bed or necessitate ether, and without the risk of doing too much which is inseparable from injecting an irritating fluid into a vascular growth.

My experiments have led me to abandon the method. By it I can cure any case of hæmorrhoids, but the total of pain and confinement is greater than by the clamp and cautery. It is only another effort at mercy such as is illustrated by the old saying about cutting off a dog's tail by inches to keep from hurting him.

This, then, is the simple result of my work as a specialist in this disease. If a patient is sufficiently weary of his affliction to allow you to operate upon him you can best cure him by the clamp and cautery operation. If he is not willing to be operated upon you will save yourself much annoyance and him much suffering if you either decline the case or confine your efforts to purely medical means.

THE EFFECT OF EXERCISE UPON THE TEETH.

By A. HUGH HIPPLE, L. D. S., D. D. S.,
OMAHA.

The action of the American Medical Association in establishing a dental section, and thereby recognizing dentistry as a specialty of medicine, has not only conferred dignity upon that calling and secured for its practitioners recognition as professional men, but it has also furnished them with an incentive to familiarize themselves with those broad principles that underlie the practice of medicine. On the other hand it has called the attention of physicians to the fact that the condition of the teeth has much to do with the condition of the general system, and patients are nowadays referred by them to the dentist quite as frequently as to the surgeon. But although physicians are beginning to recognize the seriousness of diseases of the teeth, and to impress upon their patients the importance of having them promptly attended to whenever they show signs of decay, the fact that a rapid deterioration of these organs is now going on and that serious results are likely to follow this deterioration has been almost entirely overlooked. A little inquiry and investigation, however, must convince any one that such a change for the worse is taking place. Children rarely have as good teeth as their parents had at the same age, but on the contrary their teeth are often almost hopelessly decayed before the dentures of their parents show signs of impairment. A century ago the city of New York, with a population of about fifty thousand, had only one dentist, and although much less attention was paid to the teeth then than is paid to them now, there is abundant evidence to show that our forefathers had better teeth than we have. Dr. Hammond tells us that the coming man will be hairless and toothless, and the tendency certainly seems to be in that direction. The conservation of the natural teeth is the end toward which every intelligent and conscientious dentist directs his efforts, but if the quality of the teeth continues to deteriorate the replacement of lost dental tissue must gradually give way to the replacement of lost dental organs. Every physician knows, of course, that this would not be conducive to health, but that medical men generally do not realize how important a bearing the condition of the teeth has upon the health and longevity of an individual is shown by the fact that in examining applicants for life insurance no question regarding the condition of the mouth is ever asked. The teeth may be so badly decayed that the proper mastication of food is impossible, the saliva may be vitiated, the gums and alveoli may be the seat of abscesses that are continually discharging pus, but these conditions do not concern the examining physician. Probably not one in a thousand, in reporting upon the application of a man twenty-five years of age, would think of mentioning the fact that he had lost, say, all his upper teeth and half his lower ones, although after giving it a little thought few would probably care to dispute the statement that the loss of the teeth before the twenty-fifth year will on an average shorten the life of an individual by at least several years. If this be true, no apology is needed for calling the attention of medical men to the dental deterioration that has been referred to, for discussing its probable causes, and for suggesting possible remedies.

In endeavoring to ascertain why it is that imperfect dentures are so common and dental diseases so alarmingly prevalent, it must be borne in mind that although the teeth are vital organs, developed and nourished very much like the other organs of the body, they differ from them widely in susceptibility to disease. While other organs may be delicate early in life and afterward become quite strong and healthy, or *vice versa*, the teeth, if not impaired by disease, remain the same, with the exception, perhaps, of a slight increase of density as age advances. All the other organs of the body, too, including the bones, are endowed with recuperative powers whereby injuries are to a greater or less extent repaired; but the teeth possess no such attributes, and are apparently governed by somewhat different laws from those that regulate other parts of the animal economy. Teeth that are perfect in form and structure are rarely if ever attacked by decay. It is only where the enamel is defective that dental caries can obtain a foothold. As the teeth are developed early in life, it is during childhood that those influences are exerted which by interfering with their development predispose them to disease, and it is to childhood, therefore, that we must look for the causes of dental deterioration.

Scientists tell us that use and disuse have much to do with the development of organs, and that with the progress of civilization the brain has increased and the jaws have decreased in size. The wisdom teeth from disuse have degenerated and become rudimentary; the canines, being no longer needed to tear flesh from the bone and do other heavy work, have become smaller and less prominent; the teeth in general have become soft and chalky and very susceptible to decay. This, they say, is the result of the substitution of soft, well-cooked food for that which required vigorous use of the teeth and masticatory muscles, and as there seems to be no likelihood of civilized man going back to primeval methods of preparing food, the inference is that dental deterioration is one of the prices we are obliged to pay for a high state of civilization. But use and disuse not only modify the size and structure of organs when persisted in for a series of generations, but their effect upon the organs of any one individual are no less marked. Tie up an arm so that it can not be used, and the muscles will soon become soft and flabby and will eventually disappear. Lock up a child in a room by itself with nothing to occupy its thoughts, and it will in time become an imbecile. It appears that a certain amount of exercise is essential to the development of most organs. A part when performing work requires and receives more blood than when at rest, and if much work is performed the blood-vessels increase in size and the part is better nourished. That a close relationship exists between development and nourishment, and between nourishment and exercise, is a fact so well known that it need not be discussed here; but so far as the study of the teeth is concerned the principle has been applied to the race rather than to the individual. It is undoubtedly true that what the people of a country eat for eight or ten generations will determine in a general way the size and shape of their jaws and the form and structure of their teeth at the end of that time; but it is probably no less true that what a child eats up to the time he is eight or ten years of age will determine just as certainly what will be the condition of his dental organs for the rest of his life. If the food of the child is such as requires vigorous use of the jaws, the blood supply will be liberal, the parts will be well developed, and the teeth will not be likely to suffer from decay. On the other hand, if the child is fed on soft food, requiring little or no active mastication, the jaws and teeth will be poorly nourished, and the latter at least will be defective in structure. Erupted into the mouth in that condition, no amount of care can protect them from the ravages of decay, which will sooner or later impair their usefulness and mar their beauty.

It must be remembered in this connection that although none of the temporary teeth make their appearance in the mouth until a child is five or six months of age, their crowns are almost fully developed at birth, and that the jaws of a newly born child also contain the germs of twenty-four of the permanent teeth in various stages of development. These permanent teeth do not begin to erupt until the child is about six years of age, but during that time the process of calcification is continually going on. With the first molars, the incisors, and the canines it is well started by the end of the first year; with the bicuspids, at the end of the second year; and with the second molars at about the fifth year. It will thus be seen that between the second and fifth years this process of calcification upon which depends the future character of the teeth is in most active progress. Nature intended that during this period the jaws and teeth should be well exercised, and to that end provided the child with a perfect temporary set of teeth, but, as a matter of fact, they are used but very little compared with the other organs of the body. The muscles of the arms, legs, and head are in almost constant use, and are consequently always well supplied with blood. The brain is wrestling with the problems of life as they present themselves, and it too is being exercised and developed. The eye is being trained to examine every object, and the ear to catch the slightest sound, but the teeth are hardly used at all. Nine out of ten mothers feed their children of that age on soft food. Bread made from fine flour, biscuits soaked in tea or milk, meat cooked tender and cut into small bits, with potatoes and other vegetables in such a condition that they require little or no mastication, form the chief food of the little three-year-olds. Not being actively exercised, the teeth and jaws need but a small quantity of blood, and, owing to the imperfect development that results from insufficient nourishment, they are unable to resist the attacks of the pathogenic germs that are always present in the mouth, and which eventually destroy them.

The remedy is in the hands of parents. If they will see that their children, at the earliest possible age, use their first teeth vigorously, they need have little anxiety in regard to the second set. In other words if a demand is created for sound, solid teeth, Nature will be almost certain to supply them. It is by no means difficult to teach children to chew their food. Nothing pleases small children more than to be allowed to nibble a hard biscuit or bite the meat from a bone. Nature prompts them to exercise their teeth in that way, just as it prompts a puppy to spend hours gnawing at a bone which has long since been stripped of its meat. But the average mother, partly, no doubt, out of respect to dainty dresses and well-kept carpets, but more particularly from fear of possible injury to the teeth themselves, objects to the dental calisthenics in which the child would gladly indulge, and thereby unconsciously opposes the efforts of Nature to develop good teeth. Since teeth that are perfect in structure rarely if ever decay, an ounce of prevention in the way of developing healthy dental organs is certainly worth more than a pound of cure after they are diseased, and if parents will supply their children with an abundance of bone-producing food, see that the teeth are kept clean, have them examined and attended to from time to time by a competent dentist, and, above all, have them well exercised by chewing hard food, Nature will do her part, and their children in after years will rejoice in the possession of that almost priceless endowment, a beautiful and complete set of teeth.

311 Brown Block.

The Montefiore Home for Chronic Invalids.—Dr. Leonard S. Rau, Dr. Hiram N. Vineberg, and Dr. Josephine Walter have been appointed attending gynæcologists to the institution.

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MICROBIOPHOBIA.

There can be no doubt that many persons who are fitted by their natural gifts and by the graces they have acquired to lead a sweet and placid life torture themselves and bore their friends most grievously by their abiding dread, and its incessant manifestation, of coming to harm by reason of micro-organisms lodged in or upon one article or another that they are compelled to handle or otherwise come in contact with. They remind one of the fabled old woman who grieved under the gloomy foreboding that her daughter was fated to marry and bear a child that would fall into the fire and be burned to death. Perhaps these persons have a salutary influence also, for their mania must by its very ridiculousness impress not a few of their acquaintances with the idea that the fight against microbes may be carried too far. This we may say without in the slightest degree casting doubt on the germ theory of disease or on the general policy of seeking to destroy or avoid the pathogenic micro-organisms; to asperse that theory or deprecate that policy at this late day would be to shut our eyes to the plainest of facts.

There is one phase of this microbiophobia that we should have been glad to see restricted to its few victims—namely, the fear of danger lurking in the communion cup; but it has at last achieved newspaper notoriety, and has even been treated with more or less consideration in some of the medical journals. We say "at last" because it was temporarily kept at bay several years ago by the failure of a notoriety-hunter to secure for it a hearing in medical circles. Now, however, it comes out not only that a zealous individual has been so impressed with it as to devise a system of separate receptacles for the various communicants, but that in at least one parish in an intelligent community his device has been adopted. It remains to be seen how long the panic will hold sway in that particular parish, and whether or not the fright will prove so infectious as to lead other congregations to declare—as they practically must if they follow in the Rochester people's wake—that there is considerable danger of any of their number being at the same time affected with a disease communicable through the medium of the oral secretions and so uncivilized as to eject anything from the mouth into the chalice. In our opinion, the cry of danger in the communion cup would be simply laughable did it not concern so sacred and holy an office. Certainly the medical profession can not entertain, much less uphold it, at least not until the medical mind reaches such a pitch of narrowness that the Academy of Medicine, for example, will be moved to melt its loving-cup and mold the silver into thimble-cups for the rising generation of academicians, and that, we imagine, will never happen; and not until physicians grow so inconsistent as to listen with patience to this allegation of danger, and yet go on smiling incredulously when patients aver that their venereal disease must have been contracted in a privy.

THE SIGNIFICANCE OF THE VENOUS PULSE.

The *Edinburgh Medical Journal* for June publishes a report of a paper read before the Medico-chirurgical Society of Edinburgh by Dr. James Mackenzie. The author divides the venous pulse into two forms, the auricular and the ventricular. The former, he says, presents distinct evidence of the functional activity of the right auricle. In this form there is also a wave due to the ventricle, and as it increases the auricular wave decreases and finally disappears, and thus the ventricular venous pulse is developed. The latter form is a more advanced stage than the auricular, and, as during its development there is a gradual fading of the auricular wave, there is a period when such terms do not sufficiently denote the character of the pulse; but the terms are convenient for descriptive purposes. The ventricular venous pulse appears only when there is organic disease of the heart itself (most commonly in valvular disease). When failure of the heart is functional and not due to organic disease of the valves, the auricular pulse persists to the end. Similar types of pulse may be recognized in the liver. Here the pulse appears only when there is organic disease of the heart.

In many respects, says Dr. Mackenzie, more information regarding the various cavities of the heart can be obtained from the study of the venous pulse than from that of the arterial pulse. Thus, during a cardiac revolution the arterial pulse is in free communication with but one chamber, the left ventricle, only a portion of the time, whereas in the venous pulse the effects of the right auricle during its systole and its diastole may be observed, while the time of the appearance of the ventricular wave gives information regarding the degree of incompetence of the tricuspid orifice. Information may be gathered regarding the exact time of closure of the pulmonary valves, and the persistence of the ventricle in systole for a short time after the outflow through the arterial orifices has ceased may be noted. There is also distinct evidence of the diastole of the right ventricle in the venous pulse. In heart failure the venous pulse affords information of a kind entirely different from that supplied by other means. Its appearance, increase, decrease, and disappearance may give evidences of changes in the blood-pressure quite inappreciable by any signs given by the arterial pulse. While, as a general rule, an increase of the venous pressure implies a diminution of the arterial pressure, that, nevertheless, is not always the case. Although in some cases the disappearance of the venous pulse is a sign of the restoration of the body to a healthier condition, yet in other cases it may precede a fatal termination. In these last cases there is also a failure of arterial pressure. In pulse irregularities no true knowledge of the action of the different chambers of the heart can be obtained except by the study of the venous pulse, and this study, says the author, throws a new light upon the heart's movements, and reveals a variety of them hitherto unsuspected.

MINOR PARAGRAPHS.

THE REGULATION OF THE USE OF OPEN STREET CARS.

There can be no doubt, we think, that the city board of health took an important step on Wednesday of this week in the direction of guarding invalids against dangerous exposure in open street cars. An amendment of the sanitary code was adopted prohibiting the use of such cars except from June 1st to October 1st, and directing that during the daytime every fourth car on each line shall be a closed car, and during the night every third car.

A SANITARY VISIT OF OBSERVATION.

It is announced that the city board of health's bacteriologist, Dr. Hermann M. Biggs, sailed for Europe on Wednesday with the intention of visiting various large cities to study their sanitary regulations and their methods of dealing with infectious diseases.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 12, 1894:

DISEASES.	Week ending June 5.		Week ending June 12.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	3	0	5	2
Scarlet fever	95	9	116	14
Cerebro-spinal meningitis	2	3	1	1
Measles	132	7	117	5
Diphtheria	214	71	208	43
Small-pox	19	7	12	3
Tuberculosis	0	0	145	135

The Death of Dr. Middleton Michel, of Charleston, S. C., occurred on Monday, June 4th. The deceased, who was seventy-two years old, was a graduate of the Medical College of South Carolina, but much of his professional study had been done in Paris. During the War of the Rebellion he served as a medical officer in the Confederate Army, and after the war he was an associate editor of the *Charleston Medical Journal.* The Charleston *News and Courier* says of him: "He was a physician of high attainments, a teacher of rare ability, a scholar of great versatility, a writer of eminent merit, and a charming gentleman of the old school who, while alive to the demands of the crowding present, was not unmindful of the historic past. He will be missed in professional walks, and in the quieter and sweeter ways of society there will be many to long for the sight of the vanished hand and the sound of the voice that is still."

The British Medical Association will hold its sixty-second annual meeting in Bristol on Tuesday, Wednesday, Thursday, and Friday, July 31st and August 1st, 2d, and 3d, under the presidency of Dr. George Hare Philipson, of Durham. Among the Americans who are announced in the *British Medical Journal* to take part in the proceedings are Dr. J. J. Chisolm, of Baltimore, and Dr. George T. Stevens, of New York.

Princeton College.—At the recent annual commencement a fellowship in biology was awarded to Mr. Ulric Dahlgren, one of the honor men in natural science. Among the honorary degrees conferred was that of LL. D., on Dr. Alfred A. Woodhull, of the medical corps of the army, and that of A. M., on Dr. Austin Flint, Jr., of New York.

Columbia College.—At the one-hundred-and-fortieth annual commencement, held on Wednesday evening, a hundred and twenty candidates received the degree in medicine. The honorary degree of A. M. was conferred on Dr. Landon Carter Gray, of New York.

The Society of Alumni of Bellevue Hospital.—Officers for the ensuing year have been elected as follows: President, Dr. C. C. Barrows; vice-president, Dr. Parker Syms; secretary, Dr. William N. Hubbard; treasurer, Dr. Robert J. Carlisle.

The German Hospital.—Dr. J. W. Gleitsmann has been appointed laryngologist to the hospital.

Opium as a Preventive of Ague.—Moore (*Medical Reporter*, Jan. 1, 1894, p. 1) insists strongly upon the powers of opium to prevent a malarial paroxysm, citing several instances in which malarial fever has noticeably failed to attack opium-users in India. This action seems due to the narcotine contained in the opium.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 3 to June 9, 1894:*

The following-named officers, having been found by army retiring boards incapacitated for active service on account of disability incident to the service, are by direction of the President retired from active service:

Horton, Samuel M., Lieutenant Colonel and Deputy Surgeon General.

Taylor, Marcus E., Captain and Assistant Surgeon.

Spencer, William G., Captain and Assistant Surgeon.

Upon being relieved from duty at Camp Merrill, Montana, by Wilson, William H., First Lieutenant and Assistant Surgeon, Munson, Edward L., First Lieutenant and Assistant Surgeon, will proceed without delay to Fort Yellowstone, Wyoming, and report to the commanding officer for temporary duty with troops in the National Park, during the season.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending June 9, 1894:*

Bright, George A., Medical Inspector. Detached from the U. S. Steamer Newark, ordered home, and granted three months' leave.

Marmion, R. A., Surgeon. Detached from the Smithsonian Institution and ordered to the U. S. Steamer Newark.

McMurtrie, D., Medical Inspector. Ordered to the Smithsonian Institution.

Society Meetings for the Coming Week:

Monday, *June 18th:* New Hampshire Medical Society (first day—Concord); New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society.

Tuesday, *June 19th:* Colorado State Medical Society (first day—Denver); New Hampshire Medical Society (second day); New York Academy of Medicine (Section in General Medicine); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Kings and Westchester (annual), N. Y.; Baltimore Academy of Medicine.

Wednesday, *June 20th:* Minnesota State Medical Society (first day—St. Paul); Colorado State Medical Society (second day); New York Academy of Medicine (Section in Public Health and Hygiene); Harlem Medical Association of the City of New York; Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); Medical Societies of the Counties of Allegany (annual) and Tompkins (annual—Ithaca), N. Y.; New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society.

Thursday, *June 21st:* Minnesota State Medical Society (second day); Colorado State Medical Society (third day); New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *June 22d:* Minnesota State Medical Society (third day); New York Society of German Physicians; Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *June 23d:* New York Medical and Surgical Society (private).

Obituaries.

ELIJA S. ELDER, M. D., OF INDIANAPOLIS.

Dr. Elder, business manager of the *Indiana Medical Journal*, president-elect of the State Medical Society, and for fourteen years its secretary, died at his home in Indianapolis on May 19th.

Following exposure while on a trip as a guest of the Hancock County Medical Society, an obstinate obstruction of the bowels developed. This difficulty was overcome after some ten days, but peritonitis supervened and quickly brought the end.

Dr. Elder was born at Dillsborough, Ind., on March 17, 1841. His father, Samuel Elder, was a physician. He came of good old revolutionary stock. Moving to Mount Auburn, Ind., he received his elementary education there, gained a teacher's certificate, and for two years taught in the Shelby County schools. For two years he was in mercantile life, and then, in 1863, became United States provost-marshal for Shelby County and assistant marshal for the Sixth District. These positions he held till the close of the war.

He was graduated from the Medical College of Ohio in 1867 and entered practice at Morristown, Ind. He went to New York in 1875, and was graduated from Bellevue Hospital Medical College in 1876.

Dr. Elder was an active and efficient man in all matters pertaining to the interests and work of the profession as a body. He had been secretary and subsequently president of the local society, president of the city board of health, secretary of the State health board, and for many years a most efficient secretary of the State society. While on his death-bed he was elected president of the latter organization. In 1888 he became professor of medicine in the Medical College of Indiana, and in 1890 became its dean. Much of the success of the college in recent years is due to his efficiency in organizing and conducting its business affairs. During the past summer he was medical director of the Grand Army of the Republic reunion in Indianapolis, a position the duties of which he discharged with conspicuous success. Having been not only a good physician but a capable man of affairs, he will be seriously missed by the profession of Indiana.

Letters to the Editor.

THE CELLULOID EUSTACHIAN PROBE.

122 Wyoming Avenue, Scranton, Pa., *June 5, 1894.*

To the Editor of the New York Medical Journal:

Sir: Recently some of our otologists have been calling attention to the celluloid Eustachian probe. Only last year it was mentioned among new instruments in an otological journal. I have used this instrument for ten years and do not consider it new. I first saw it used by Urbantschitsch, of Vienna. I desire, however, to call attention to the danger of this instrument.

The material of which it is made undergoes a spontaneous change which renders the probe exceedingly fragile; so that in following the curve of the catheter it is liable to break, and the small piece thus broken off is almost sure to be pushed on into the Eustachian tube. This I think would be a more embarrassing accident than the unintentional leaving of a sponge or forceps in the body after a laparotomy.

Whalebone is certainly unsatisfactory, and, if celluloid must be used, these instruments ought to be frequently tested and frequently renewed. C. L. Frey, M. D.

Proceedings of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Third Triennial Meeting, held in Washington on Tuesday, Wednesday, Thursday, and Friday, May 29, 30, and 31, and June 1, 1894.

The President, Dr. Alfred L. Loomis, of New York, in the Chair.

(*Continued from page 726.*)

Nephritis in its Surgical Aspects.—At a session held under the direction of the American Association of Genito-urinary Surgeons, a discussion on *Surgical Kidney* was opened by Dr. Edward L. Keyes, of New York. He confined his remarks to a consideration of that form of surgical nephritis in which suppuration occurred, either spontaneously, in the course of disease of the urinary tract below, or originating below as a result of infection by the surgeon. His paper, in its introductory portion, cited many authorities in support of the following statements: 1. That without microbic infection, suppuration in the kidneys was impossible. 2. That the bacilli found oftenest were notably the *Bacterium coli commune*, and less often the *Staphylococcus pyogenes aureus.* 3. That these bacilli gained entrance in a variety of ways. 4. That the introduction alone of these bacilli did not occasion ascending pyelitis or even necessarily cystitis. 5. That the soil was made receptive for microbic invasion by anything which interfered with the free urinary outflow, by traumatism, and by failure of general vitality of the individual. The kidney was especially prepared for invasion by dilatation of the ureters.

Dr. Keyes then described his clinical methods of securing urinary antisepsis and asepsis, and of instituting catheter life upon the old subject, whose bladder, ureters, and kidneys were damaged. Then followed an exhaustive account of bacteriological work conducted for him by Professor Dunham, of New York, to determine the destructive or inhibitive power of various medicinal agents over these three bacilli. The clinical conditions had been reproduced as nearly as possible in the laboratory. It was found in this way that nitrate of silver was by far the best agent for overcoming the effects of local contamination, while corrosive sublimate was better where the tissues were involved. Salicylic acid was shown to be very useful, while boric acid was proved to be of no more value than common salt. The various medicated urines showed little or no inhibitive power over bacterial growth.

From these researches the author concluded that microbic infection always took place from within the body in the course of disease; that the healthy organism and a vigorous bladder could cope successfully with microbic invasion; that a suitable condition of the patient's soil was necessary for the perpetuation of the inflammatory symptoms after microbic invasion; that this condition was intensified by traumatism and physical weakness, and by a dilated and diseased condition of the ureters and kidneys; that pyelonephritis under these circumstances was most often the result of microbic infection from below; and, lastly, that by local means principally, and by flushing the urinary passages with mineral waters, asepsis and sterilization of the urine could best be attained.

The Bacteriology of Pyelonephritis.—Dr. George M. Sternberg, surgeon general of the army, in a paper on this subject, said that ascending nephritis or pyelonephritis was very commonly secondary to a cystitis of long standing. Recent researches showed that the *Bacillus coli communis* was found more frequently than any other micro-organisms in the so-called "surgical kidney." This bacillus was now known to be the usual cause of peritonitis. Injections of a pure culture into the ureter, after tying it below the point of injection, had been shown by Schmidt and Aschoff to give rise to pyelonephritis, and the changes so induced were said to be those seen in the "surgical kidney" of man. Clado, in 1887, Albarran and Hallé, in 1888, and Rovsing, in 1890, had described non-liquefying bacilli, found by them in the urine of patients with chronic cystitis or pyelonephritis, which appeared to be identical with the *Bacillus coli communis*, which had been shown by the subsequent researches of Schmidt and Aschoff, and of others, to be very variable in its growth on various culture media. Krugius, in 1891, had first identified the bacillus described by Clado (his *Bactérie septique*), and by Albarran and Hallé (*Bacille pyogène*), with *Bacillus coli communis*, and this identification had been verified by the researches of Achard and Renault, Schmidt and Aschoff, and others. In twenty-two cases of cystitis studied by him in 1892, Krugius had obtained *Bacillus coli communis* fourteen times in pure cultures. Relaub, in 1892, had obtained the same bacillus in pure cultures in six cases out of sixteen of cystitis examined. The number of cases of pyelonephritis reported by various authors since 1889 in which *Bacillus coli communis* was found, and in which it was probably the cause of the ascending nephritis, was twenty-nine, and in twenty of these it had been found in pure culture. In view of these facts, the ætiological relation of this bacillus to ascending nephritis seemed extremely probable. Certain cases appeared to be due also to the presence of one or more species of *Proteus*, and possibly there were some due to other micro-organisms.

Dr. George Chismore, of San Francisco, continued the discussion. He said that the conclusions he had drawn from his own observations tallied quite closely with those expressed in the paper. It had seemed to him, however, that a small stone, growing slowly in the bladder, apparently established a tolerance in the viscus, and also that the introduction of an instrument into the bladder of a young subject was more apt to be followed by renal complications than when the subject was older. He agreed thoroughly with the author as to the danger being greater when there was polyuria with the urine of a low specific gravity. Tubercular affections of the urinary tract exerted a similar prejudicial influence. He had never believed that injections into the bladder could be effectual in destroying the microbes.

Dr. Francis S. Watson, of Boston, spoke of the effect of long-continued drainage of the bladder in relieving the form of pyelonephritis under discussion. He could recall six cases in his practice which had exhibited marked benefit from such treatment. Two of these had been treated by a catheter passed in from the meatus, and four by the use of a soft-rubber tube in a perineal opening. The treatment was most applicable to old prostatics in whom the disease was already marked. No one need hesitate because of the acuteness of the symptoms.

Dr. Keyes said that he had practiced this method of drainage with satisfaction.

The Conservative Surgery of the Female Pelvic Organs was discussed at a session held under the direction of the American Gynæcological Society. Dr. William M. Polk, of New York, opened the discussion. His remarks were based on a hundred and sixty-four cases of abdominal section for disease of the appendages. Of these, sixty-four had been subjected to the radical operation, and one hundred to the so-called conservative process. Among the three prominent operations on the uterus—viz., myomectomy, ligation of the arteries for fibroma, and curettage and packing—the first might be said to be particularly appropriate in all cases of pedunculated fibroids, fibrocystic or myomatous growths; ligation of one or more of the feeders of the uterus instead of oophorectomy; and curettage and gauze-packing in all forms of endometritis. To avoid the occurrence of premature atrophy of the genital organs in young women, and to retain the function of ovulation, he had practiced, and with success, resection of the diseased ovaries.

In conclusion, he referred briefly to a number of his cases in which pregnancy had followed such conservative operations, and, more important than all, where the mental, moral, and physical well-being of the patients had been preserved.

Dr. William Goodell, of Philadelphia, being too ill to continue the discussion, his paper was read by the secretary of the Congress, Dr. William H. Carmalt. In this paper the writer stated that he considered that the whole question of the proper treatment of these disorders hinged on the effect of castration on women. These effects were prolonged and distressing vasomotor disturbances, a tendency to low spirits, suicidal impulses, and even insanity. Again, castrated women were liable to become unsexed to such an extent as to lose all sexual feeling or to have it greatly blunted. In some, senile atrophy of the genitalia took place, or in its place there was a hyperæsthetic condition of the vulva which forbade coition and created much domestic unhappiness. An unavoidable and disagreeable result from castration was sterility, which in itself was often a curse. The writer laid stress on the prevalent lay opinion that women deprived of their ovaries were thereby wholly unsexed. Castration in the male or in the female was alike regarded as a sexual mutilation to which a stigma was attached. No woman would marry a eunuch, and few men would wed a woman without ovaries. It was manifest, he said, that during the period of a woman's menstrual life her mental, physical, and social welfare depended largely upon the continuance of the catamenial and reproductive functions; hence, the conservation of those organs which presided over these functions was of the utmost importance.

The writer went on to deprecate hasty operative interference. According to his experience, few women perished from chronic disease of the pelvic organs; many more died from radical operative measures. Cases were cited in which great disorganization of the tubes and ovaries had not prevented conception, and also where pregnancy had occurred even when only a small fragment of the ovary or a short stump of tube had been left after the operation. The writer contended that the glory of modern surgery was conservation, yet the glamour of antiseptic surgery had so dazzled the modern gynæcologist as to make him a spoiler rather than a conservator.

Dr. Luteaud, being asked to take part in the discussion, said that he had never seen Dr. Polk's method of curettage and packing cure a case of pyosalpinx, but he had seen pregnancy follow this conservative treatment. He was decidedly of the opinion that a woman under forty years of age enjoyed much better health when the function of menstruation and ovulation had not been interfered with.

Dr. Matthew D. Mann, of Buffalo, expressed his pleasure at having heard this discussion, for he believed it would have the effect of removing the stigma from the gynæcology of the present day—that there was too strong a tendency to do mutilating operations. He had practiced Dr. Polk's methods, and had had his patients express their gratification at this conservative effort.

Dr. Joseph Taber Johnson, of Washington said that in one sense all were conservative. He thought the radicals would not accept the statement that they believed in the total destruction of woman's genital organs and the crowning glory of womanhood—motherhood. He did not know of any operator who cut out the ovaries for the cure of a salpingitis, or removed the tubes for a slight inflammation and where the tube was still open. Most of the patients operated on had already been made sterile by the disease. He was afraid that the discussion would have the effect of deterring many from submitting to operation who really needed such treatment.

Dr. Howard A. Kelly, of Baltimore, said that we were unfortunately at a stage when we were obliged to speak of these matters in a sweeping way, instead of referring to special forms of pelvic disease. This discussion had begun ten or eleven years ago, when the question had arisen as to the propriety of removing both ovaries when only one appeared to be diseased. It had not long ago been the practice to remove an ovary containing a small cyst, yet now it was his practice to rupture even quite large cysts without extirpating the ovary.

Dr. Florian Krug, of New York, said that he belonged both to the radical camp and to the conservative camp. He was in accord with most of Dr. Polk's statements.

The Influence of Animal Experimentation on Medical Science.—The president's address, on this subject, was delivered on the evening of May 31st. In the address it was said that medicine had been persistently denied a place among the sciences, yet to it alone the answer "We do not know" had been denied. The scientific experimenters sought for truth and truth alone. In widespread epidemics the effect of disease might be studied on vast numbers of human beings and with great sacrifice of *human* life; but in the laboratory great truths were discovered with but small loss of *animal* life. Galen had laid the foundation stone of medical science, yet little besides the experimental part of his vast labor had stood the test of modern scientific investigation. From Galen's time to Harvey's great discovery of the circulation of the blood, very little experimental work had been done, and medicine, instead of advancing to the position of an exact science, had become the plaything of theorists and impostors.

After Harvey, the next series of epoch-making experiments had been made by Galvani and Volta on the condition of the nerves and muscles. The first attempt to continue life for any length of time by means of artificial respiration had been made by Robert Cook, in 1664, and this method was now the reco nized means of preserving life in cases of asphyxia and in resuscitating the newborn. Boyle, near the close of the seventeenth century, had demonstrated that atmospheric air was necessary to animal life. Dr. Christopher Wrenn, of Oxford, had been the first to make experiments in injecting substances into the blood-vessels, and in 1666 the first transfusion of blood had been tried on animals. Mr. Boyle had afterward elaborated this method, and had shown that death from hæmorrhage might be prevented by the transfusion of blood.

The investigations of Magendie on living animals had inaugurated the great work of the present century. We might rightly regard him as the originator of the modern system of animal experimentation.

The speaker said he would call the special attention of the opponents of animal experimentation to the fact that in all this list of investigations not a single experiment had been directed immediately to the discovery of disease, but solely to the determination of the physiological function and normal action of the vital processes, and to defining the specific influences of given substances on the healthy living organism. It had not been until Claude Bernard had applied his experimental methods that the action of medicinal agents had been well understood. By such experimentation modern therapeutics had been emancipated from the bondage of empiricism, and no longer wounded friend or foe by aimless blows in the dark. It was worthy of note that all these various investigators were working in one direction—the relief of human suffering. The anæsthesia of chloroform had been discovered through experimentation on a low form of animal life—the ant. The illustrious Simpson had perfected his experiments in the use of chloroform on animals before trying it on the human subject. Hypodermic medication had been used on sporting dogs before it had been tried on the human being. By laboratory experiment it had first been proved that tuberculosis was an infectious disease., The valuable studies of Pasteur had introduced us into a new and strange world, and his methods of experimentation had been imitated by experimenters all over the world. The crowning glory of Pasteur's work had come with the discovery of the attenuation of viruses.

The discovery of the bacillus of tuberculosis by Koch had marked another great epoch in medical history, but it had only been accomplished by a continuance of Pasteur's methods of animal experimentation. Within the past two decades animal experimentation had accomplished more in the field of cerebral localization than all the previous centuries of post-mortem study. Looking back over this history of medical discoveries, it was evident that most of them had been barren of immediate results. The fatal error of the opponents of animal experimentation was that they demanded *immediate* results. The only ethical question was, What price should be paid for the benefit received? Did the end justify the means? In answer to this we could seriously appeal to all intelligent men for a just criticism; from the ignorant we need expect only censure. But from those who, in the valley of the shadow of death, had learned what manner of men we were we could confidently expect the answer, "We have trusted to you the lives of our dear ones; we trust to you God's dumb creation."

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of April 11, 1894.

(Concluded from page 700.)

Acute Puerperal Cellulitis and True Pelvic Abscess.—Dr. Charles P. Noble read a paper with this title in which he stated that it was his purpose to report his experience with acute puerperal cellulitis and true pelvic abscess, collecting together in one paper the various cases which he had reported from time to time. The time had now come when such a communication would be received in a proper spirit—that is, as a report of conditions carefully observed at the bedside, and therefore as a contribution to scientific medicine. The first whirl of excitement which had followed the discovery of the real nature of chronic pelvic inflammatory troubles had passed by. Men were no longer blinded by the prejudices of the era when all pelvic inflammation had been regarded as cellulitis. A sufficient time had now elapsed to enable them to recover from the reactionary wave, during the height of which it had been believed that all pelvic inflammation had necessarily been tubal in origin. Practitioners of medicine were very prone to be ruled by the dogmas of a few leaders in professional thought, and gynæcologists were no exception to this rule. During two generations they had given implicit adherence to the dogma of Nonat, Churchill, and Emmet, and during the present generation no less implicit adherence to that of Tait and his disciples. It was now time to accept all the facts in the case, whether or not they agreed with prevailing theories.

Case I.—Dr. Noble had seen this patient operated upon on May 8, 1888, by Dr. D. Longaker, who had given him the following history: Mrs. F., aged twenty-six years, tertiipara. She had been delivered of the third child seven weeks before by a natural and easy labor. On the fifth day she had had a chill, and chills and fever had continued thereafter, also great pain. Dr. Longaker had seen her seven weeks after labor, and had operated for a clearly defined mass situated mostly in the left side of the pelvis, rising up above the brim of the pelvis and extending from the symphysis pubis to the iliac crest. An exploratory cœliotomy had shown that both uterine appendages were of normal size, but were somewhat fixed by recent adhesions; "neither right nor left ovary nor tube formed any part of the mass; these structures could be distinctly outlined apart from it." Fluctuation was distinct in the swelling as had been ascertained by the intra-abdominal finger. A second incision had been made above Poupart's ligament, and about half a pint of pus had been discharged. The pus cavity had been located in the left broad ligament, and had extended between the uterus and bladder into the right broad ligament. The patient had made a good recovery, but had borne no children since. This was probably because effectual means had been taken thereafter to prevent conception.

Case II.—This patient had been seen at the Philadelphia Lying-in Charity during his service there as senior assistant physician. He was unable to find any published notes of the case. His recollection of its salient points was very clear and distinct. This patient had been infected after labor, and after a number of days had presented the usual evidences of suppuration, together with the signs of intense inflammation in the right side of the pelvis and in the right inguinal region. A hard mass of exudate had formed in the right groin, which could be distinctly outlined by palpation. There had been every evidence that this had been a case of true pelvic abscess, but, influenced by the teaching that all pelvic suppuration was intra-peritoneal, an abdominal section had been made by Dr. Charles Meigs Wilson, assisted by himself. The uterine appendages had been carefully examined, and it had been evident that the pus accumulation had been entirely distinct from them, and that it had been external to the peritonæum. The abdominal incision had been closed and the pus let out by an incision made above Poupart's ligament, near the anterior superior spine of the ilium. This patient had made an uninterrupted and quick recovery.

Case III.—This case was seen by Dr. Noble in consultation with Dr. Himmelwright, on March 2, 1890. The history, as given to him by Dr. Himmelwright, was as follows: The patient had had a miscarriage on January 3d, in the second month of pregnancy. One week later symptoms of pelvic inflammation had appeared, and a diagnosis of peritonitis had been made. The patient got about by February 1st. After a week, pain had been felt in the right inguinal region, and had gradually increased in intensity, extending to the lumbar region. After another week (February 15th) she had been unable to walk erect and to put her foot firmly on the ground, but had to stoop forward. During this time the temperature had remained normal and there had been no chills. At times the pulse had been slightly accelerated. The pain had continued to increase, and, on February 27th, a swelling had been noticed in the right lumbar region. On March 1st, the temperature had risen to 101° F., and the pulse to 120, and there had been slight chills. On March 2d he had seen her. The temperature was normal, the pulse about 90. The right inguinal region was tender, suggesting, indeed, appendicitis, but there had been no symptoms to warrant the supposition. A semi-fluctuant swelling had been found in the right lumbar region. The next day this swelling had increased, and a hard mass had been felt in the right inguinal region, extending as high as the ribs. The swelling in the lumbar region had been opened and two or three pints of pus had escaped. Introducing his index finger, it had passed around the ilium into the iliac fossa. A rubber drainage-tube had been introduced, and irrigated daily with a dilute solution of peroxide of hydrogen. This discharge had gradually decreased and the tract had healed rapidly, closing from the bottom.

It might be asked, the speaker continued, Why was this claimed as a case of true pelvic abscess? The abscess had been undoubtedly situated in the false pelvis on the right side. He had had his finger in it. The entire absence of bowel symptoms excluded perityphlitis. The fact that, on examination, the uterus had been found movable and the broad ligaments free from exudate—no fixation of the appendages—excluded pyosalpinx. Hence, he took it, the abscess had been due to the breaking down of an infected pelvic gland situated behind the peritonæum, in the right iliac region.

Case IV.—This case had been in every way similar to the first. He had seen the patient, in consultation with Dr. Langrehr, five weeks after labor. The perinæum had been torn, and had been sutured some hours after labor. Septic infection had occurred, and for three weeks the temperature had ranged between 100° and 103° F. During this time there had been no pain or distention of the abdomen, or tenderness of the uterine appendages on examination. The perineal wound had become inflamed, however, and the stitches had been removed. During the fourth week all the symptoms had abated. At the beginning of the fifth week the fever had increased and tenderness in the left inguinal region had become marked. Purulent matter had been discharged *per vaginam*, but whether or not it had come from the abscess which had formed was questionable. On examining the patient five weeks after labor, he had found her much depressed, in a typhoid condition, with a swelling above the pubes and to the left. On examination under chloroform anæsthesia, a mass of exudate had been felt in the left broad ligament extending between the uterus and the bladder, and plainly palpable above the pubes. His diagnosis had been true pelvic abscess. He had advised median section for an absolute exclusion of complicating pyosalpinx; then a second incision parallel with Poupart's ligament, to evacuate the abscess. This had been done by Dr. Langrehr on the following day. The uterus, ovaries, and tubes had been found healthy. The omentum was, in places, densely adherent. The abscess was situated within the broad ligament, and had extended upward behind and two inches above the ramus of the pubes. It had contained about six ounces of thick pus, which had been evacuated by an incision in the left inguinal region, directly above Poupart's ligament. The ultimate recovery had been perfect.*

Case V.†—Mrs. G., aged thirty years, secundipara, had been delivered on January 18, 1893, of a living child, after a normal labor. The placenta had been delivered by the introduction of the hand. The following day Mrs. G. had had a temperature of 104° F., and had been suffering much from pain in the right groin and from tympany. On the night of the 20th the speaker had seen her in consultation. The temperature was 103° F., the pulse 110, and there was marked tympany and much tenderness in the right groin. A striking feature in the case had been that, although the bowels had been very much distended, the abdominal wall itself had not been very tense. The coils of distended bowels could be very plainly observed through the abdominal wall. The bowels had not been moved for four or five days. The patient had been put upon quinine, strychnine, and digitalis, and the bowels had then been freely moved. Vaginal and intra-uterine douches of corrosive sublimate had been employed, although the lochial flow had not been foul-smelling. The patient's condition had remained very much the same until the seventh day, when the right broad ligament had become infiltrated, so much so as to be plainly palpable above the brim of the pelvis in the right groin, while, from below, the anterior and right quarter of the pelvis had been filled with exudate closely attached to the pelvic wall and displacing the cervix backward into the hollow of the sacrum. This exudate had begun to disappear about the fourteenth day, and had been absorbed very rapidly. Convalescence had been further interrupted by a nephritis, possibly of septic origin, and also by severe intestinal pain accompanied by diarrhœa, presumably due to inflammation of the large bowel. This patient had been seen in consultation by Dr. Goodell and Dr. Parish. She had eventually made a good recovery.

Case VI.—Mrs. H., aged twenty-eight years, a secundipara, had been delivered of her second child in March, 1891, the labor having been conducted by a midwife. She had been infected and had been extremely ill. He saw her, in consultation with Dr. Leopold, five weeks after the labor. At that time she was prostrated, with a rapid pulse, "leaky" skin, chills, irregular temperature—in fact, the classical symptoms of septic intoxication.

On examination the right broad ligament had been found indurated, and also a mass of exudate extending on the right side of the abdomen almost as high as the umbilicus. From the extent of the mass it had been supposed that a right pyosalpinx with an intraperitoneal abscess had existed; but, in view of the puerperal history and the existence of a cervical laceration, the possibility of a true pelvic abscess had been discussed. A median abdominal incision had been made on April 16th, and the abdominal viscera in the lower right quarter of the pelvis had been found fused by adhesions. The patient had taken ether so badly, having become cyanosed while still partly conscious, and the pulse had been so weak, that Dr. Noble and the gentlemen present had been convinced that to attempt the separation of the adhesions, and the evacuation of the pus from above, would result in her death on the table from ether. An unsuccessful attempt had been made to reach the pus by an incision made near the anterior superior spine of the ilium without giving more ether. The exploration had not been pushed, owing to the patient's bad condition. The patient had then been put to bed and had improved for some days. The operation had again been proposed and chloroform had been selected as the anæsthetic, which had produced as much cyanosis as the ether had done. An incision had been made directly over the broad ligament, the uterus had been located, and the index finger had been forced into the broad ligament, evacuating several ounces of pus. With rubber drainage a satisfactory convalescence had followed.

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* The first four cases were reported in the *Medical News* for August 29, 1891.

† *Annals of Gynæcology and Pædiatry*, June, 1893.

On October 27, 1892, Dr. Noble had operated on Mrs. H. to cure a ventral hernia which had formed at the site of the third incision. On opening the abdomen he had been surprised to find that the adhesions throughout the right side of the abdomen, which had been universal eighteen months before, had disappeared, except a point of adhesion between the omentum and hernial sac, and another between the omentum and broad ligament. Both appendages were perfectly healthy. This fact demonstrated what was believed when the pus had been evacuated—namely, that it had not been a pyosalpinx, but an abscess of the broad ligament.

The disappearance of the very extensive adhesions in this case was worthy of record as showing that peritoneal adhesions were not necessarily permanent.

It was of interest to report that, during the summer of 1893, this patient had been delivered of a living child after a normal labor, and that she was at present in good health.*

Case VII.—Mrs. F., aged eighteen years, had been confined on May 8, 1893. She had had a mild puerperal sepsis and had been in bed for two weeks. The following month she had been constantly sick, having been in and out of bed, suffering with pelvic pain, anorexia, and having had more or less fever. (The temperature and pulse he did not know, as he had not been in attendance.) She had come under his care six weeks after her confinement, and had been admitted to the Kensington Hospital for Women. Examination had shown a large inflammatory mass in the pelvis, absolutely anchored to the left pelvic wall. She had been under observation for two weeks, with the temperature fluctuating between 99° and 102° F., and with the general evidences of mild septic absorption, such as anorexia, sweats, chilly sensations, and increased pulse-rate.

Believing that pus was present in the pelvis, either in the form of a true pelvic abscess or a pyosalpinx, an abdominal section had been made on June 26, 1893. The following conditions had been found: The uterus was fairly well involuted and was displaced upward and backward by a mass in the left broad ligament. The right broad ligament and the right Falloppian tube and ovary were entirely normal, as had been demonstrated not only by touch, but by delivering the ovary and tube through the abdominal incision. The omentum was adherent to the anterior face and upper border of the left broad ligament in front of the Falloppian tube. This adhesion had been separated. The left ovary and tube had been found to be entirely normal, the meso-salpinx being normal, soft, and movable. This had been demonstrated not only by touch but by vision, the woman being in the Trendelenburg posture, so that the entire left side of the pelvis had been in plain view. The left broad ligament had been very much infiltrated with inflammatory material and firmly anchored to the anterior and left bony wall of the pelvis. Fluctuation had not been apparent. It had been determined to close the abdomen, and, if septic symptoms persisted, to open the broad ligament from below. That portion of the omentum which was adherent to the broad ligament had been ligated and cut off. A small gauze drain had been placed against the broad ligament where the omentum had been separated, so that, should pus make its appearance at this point, it would find its way out through the abdominal incision.

The patient's convalescence had been uninterrupted; the temperature had rapidly dropped to the normal, and her general condition had steadily improved. The gauze drain had been removed, good union of the abdominal incision had been obtained, and the patient had been discharged from the hospital at the end of four weeks. In the meantime not only had her general condition very much improved, but the pelvic mass had almost disappeared.

This patient had consulted Dr. Noble on January 9, 1894, to ascertain the cause of a suppression of menstruation of three months. He had found her to be between three and four months pregnant. A careful examination of the left broad ligament had failed to discover any evidence of the former cellulitis, the left broad ligament feeling exactly like the right one.

The evidence of the existence of acute puerperal cellulitis as a primary condition in this case was absolute. There had not been even a complicating pelvic peritonitis in the ordinary sense of that term, merely a point of adhesion between the omentum and the broad ligament, which had been, of course, due to a small circumscribed area of peritonitis. He had been able to demonstrate these conditions to a number of physicians who were present, including among others Dr. Fullerton, of the Woman's Hospital.

What he wished especially to insist upon was that in this case neither Falloppian tube had been involved in the inflammatory process, that both had been entirely normal. The left Falloppian tube and its mesentery had scarcely been even congested. The circumscribed area of peritonitis where the omentum had been adherent to the broad ligament had been plainly due to the fact that the inflammation had extended directly through the broad ligament to the peritonæum, leading to the adhesion of the omentum. That this was possible had been denied by those who maintain that all pelvic inflammation was due to the infection which had spread through the Falloppian tubes. In this case the conditions presented had been unmistakable.

There thus had been seven cases, in all of which, except the third and fifth, an abdominal section had been made, so that we had the evidence not only of the usual physical examination, but also that obtained from an intraperitoneal examination. In Cases I, II, IV, and VII, the abdomen had been opened and the uterine appendages examined, and it had been demonstrated that they had been either free from disease, or, at the most, lightly attached by recent adhesions. In these four cases there was not a shadow of a doubt that the disease had been in the broad ligament, and that it had spread to the broad ligament directly from the uterus or the vagina by way of the lymphatics.

Case VI had been undoubtedly not a case of pyosalpinx, and he had no question himself that the pus had been located in the broad ligament. A carping critic might affirm that, even although it had not been a pus tube, the pus had been intra- and not extra-peritoneal, and that it had been due to suppurative peritonitis. His opinion that the pus had been in the broad ligament was based upon the fact that the pelvic exudate had been anchored to the anterior and right pelvic walls, and that when he had cut down upon the mass he had recognized the uterus and had torn through the broad ligament with his finger in front of the Falloppian tube.

The evidence in Cases III and V was not so absolute as in the others, and they were included in this list not for the sake of *demonstrating* the occurrence of puerperal cellulitis, as was done by the other cases, but because of their relative bearing upon the subject.

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* Reported in *Annals of Gynæcology and Pædiatry*, January, 1893.

The foregoing cases demonstrated several interesting facts with reference to obstetrics and gynæcology:

1. That in the puerperal state, pelvic cellulitis and true pelvic abscess occurred as the result of septic inflammation.

2. That inflammation might spread from the vagina or uterus along the pelvic lymphatics to the broad ligaments without involving the Falloppian tubes.

3. That peritonitis could be set up by the spread of inflammation from the broad ligaments to the peritonæum without involvement of the Falloppian tubes.

4. That very extensive pelvic exudate and intraperitoneal adhesions could be absorbed.

It hardly seemed worth while to bring evidence to bear in support of the first proposition, and it would not be called for had it not been that a few men of wide experience maintained the contrary. Having been able to present absolute evidence in the shape of carefully and thoroughly observed cases occurring in his own practice, he would not take the time or trouble to make reference to the literature.

What he had said concerning proposition one was equally true of proposition two, which was distinctly proved by certain of the foregoing cases. Case VII was a beautiful illustration of the fact that a very extensive puerperal cellulitis could be present and yet the Falloppian tubes be entirely healthy. In this case they had scarcely been, if at all, congested, and the mesosalpinx had been entirely free from infiltration.

The third proposition was likewise proved, especially by Cases IV and VII. In both of these cases the omentum had been adherent to the broad ligament, although the tubes had been free from disease. He had no doubt that pelvic peritonitis was usually due to the spread of inflammation from the endometrium through the Falloppian tubes to the peritonæum, but these cases showed that this rule was not without exceptions. Numerous other exceptions had come under his observation. For instance, a short time ago he had done a hysterectomy for a fibroid tumor, in which the tumor, being impacted in the pelvis, had been adherent to the rectum and posterior pelvic wall, over an area of at least nine square inches, and yet in that case the Falloppian tubes had been entirely normal. In several cases of appendicitis he had found the peritonitis to extend to the pelvis, the Falloppian tubes having nothing to do with its occurrence. Moreover, it was a well-known fact that when small tumors, especially dermoids, had become wedged in the pelvis or twisted upon their pedicles, peritonitis had ensued. Likewise, that in cases of malignant disease of the abdominal or pelvic organs adhesions were almost always present. Therefore it must be admitted that pelvic peritonitis could occur independent of salpingitis.

Case VI demonstrated the fourth proposition. In that case the entire right lower quarter of the abdomen had been fused together by recent peritoneal exudate, and light adhesions had formed in the left half of the pelvis, yet eighteen months later, when the abdomen had been reopened, the entire mass of adhesions had been absorbed, with the exception of a small point between the omentum and right broad ligament, and another small point between the omentum and the hernial sac. Owing to the very extensive character of the adhesions in this case, it was a striking example of the fact that recent adhesions could be entirely absorbed.

Two women of the seven whose cases have been detailed in this report have been delivered of living children since their recovery from the attack of acute puerperal pelvic cellulitis.* The subsequent history of four of the other five women was unknown to him. The fact that two of these women had borne children was of interest because of its bearing upon the question of the relation of pelvic exudates to sterility. As this paper had dealt only with demonstrated facts, the speaker merely suggested that the occurrence of pregnancy after the existence of extensive exudates, forming during the puerperal state, was best explained in many cases by the fact that the condition presented was a puerperal cellulitis rather than a diseased tube. It was a severe tax upon his credulity to accept the statement that extensively diseased tubes, more especially pus tubes, could so far recover as to permit the occurrence of pregnancy; and he believed that the true explanation in not a few cases of pregnancy following the recovery from puerperal pelvic inflammation was that the disease had originally been in the broad ligament and not in the Falloppian tube.

He wished to say a few words concerning the relative frequency of acute puerperal cellulitis and inflammation of the Falloppian tubes. He believed as firmly as any one that pelvic cellulitis and true pelvic abscess were comparatively rare conditions, and that the usual variety of pelvic inflammation was a salpingo-peritonitis. He had not met with pelvic cellulitis except in the puerperal state, and had no reason to believe that it occurred in the non-puerperal state, except as a result of infected wounds of the vagina and perinæum. As such conditions were very infrequent, a pelvic cellulitis in the non-puerperal state would be a surgical curiosity.

He had added these remarks lest it might be inferred by the unthinking that he was desirous of supporting the old and abandoned theory of Nonat and Emmet concerning pelvic inflammation. At the same time he was glad to be able to present incontestable proofs of the occasional occurrence of acute puerperal pelvic cellulitis and true pelvic abscess.

Dr. Daniel Longaker said that it was a question in his mind whether septic puerperal troubles so frequently resulted in chronic salpingeal disease as did some other conditions. He believed that gonorrhœal disease was more frequently the cause of pyosalpinx than was puerperal sepsis. He had seen several instances where abdominal section had been done at varying intervals, from a few months to several years, after the occurrence of severe metro-peritonitis, and the amount of tubal trouble had been very slight.

In regard to the true nature of these masses which we occasionally found in septic infection of the puerperal period, he believed that a proportion, and probably a large proportion, were due to cellulitis. He had seen a number of such cases where the masses had disappeared and the women had become perfectly well and had borne other children. This was hardly compatible with the supposition that these had been cases of pyosalpinx, which he looked upon as an incurable condition and as inducing sterility. In his experience true pelvic abscess had been more frequent than we had been led to believe by the statements of some. In one case the abscess had discharged through the bladder, and the woman had made an imperfect recovery; pyuria had continued a long time, and death had finally occurred from hæmatemesis. Another termination was by spontaneous discharge in the region of the groin, and of this he had seen two illustrations.

A noteworthy point in considering the ætiology was that in many of these cases the labor was an easy one and of brief duration. In such cases he thought that it was safe to assume a slight laceration of the perinæum, and infection at that point and extension along the lymph paths. There was another point in his case (the first in Dr. Noble's paper), the full value of which had not occurred to him at the time. The surroundings of the patient had not been ideal. The first thing noticed on entering the house had been the odor from an old water-closet. The woman had lived here in this tainted atmosphere continuously during the latter part of her pregnancy, and everything that had come in contact with her body had been exposed to this infection; her powers of resistance had thus been lowered, and it was probable that infection had occurred in that way, and not through any fault of the doctor in attendance. The force of this observation was evident when we recalled the fact that in rural districts septic infection during the puerperal period was comparatively infrequent. On this same street he had attended a woman living in a house through the cellar of which passed a terra-cotta drain through which passed the drainage of several houses. A short time before labor the drain had become obstructed, and had been opened and left open. This woman had had a short labor with forceps, and within forty-eight hours a most violent septic infection had developed. In a short time the patient had become maniacal, and died within a week.

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* Since writing this article Dr. Noble has learned that Dr. Himmelwright's patient (Case III) has been delivered of a living child after a normal labor.

Dr. George E. Shoemaker said that this discussion had always seemed to him like that of the two knights viewing different sides of the same shield. It was reasonable to suppose that abscess might occur in any part of the body in conditions of profound toxæmia. He had opened an abscess in the lower lip in puerperal septicæmia. Abscess would form at any point of lowered vitality. This might occur in the broad ligament where there had been traumatism. It was easy in these cases to explain the direct channel of infection.

Dr. George I. McKelway said he had seen two cases such as Dr. Noble had described. One had been under the care of Dr. Hirst at the Philadelphia Hospital. The woman, after childbirth, had had a large hard mass to the left of the uterus. After several days of high temperature, etc., Dr. Hirst had determined to operate, but, on coming prepared to do so, had found the temperature down and the woman's whole condition greatly improved, and he had concluded to wait. The woman's condition remained good, and in two or three weeks the hard mass had gradually disappeared. After-examination had shown the tubes and ovaries perfectly free. The second case had been under his care last summer, in the Presbyterian Hospital. A woman had been sent in with a stinking placenta which had been retained three days. He had removed it with his fingers, had irrigated, and packed. Some days later an exudate on the left side had developed. From her previous and present condition, and the temperature, etc., he had been sure that there had been an abscess. On opening the abdomen, ten days after admission, he had found the left broad ligament and left side of the pelvis occupied with a great mass of hard exudate. Dr. J. Hendrie Lloyd, Dr. William C. Lott, and several resident physicians had been present. To them he had demonstrated that this condition had been in the broad ligament and the pelvic tissue, and not in either tube or ovary of either side, by bringing the tubes and ovaries of both sides into view at the same time, and showing them to be perfectly normal and healthy. As the exudate had been almost as hard as a paving stone, pus not having formed, he had closed the wound and had awaited developments. The mass had disappeared in about three weeks, and the woman had made a perfect recovery.

Dr. Langrehr said he was fully in accord with what Dr. Noble had said with regard to the possibility of pelvic cellulitis occurring without having a direct source from a diseased Fallopian tube. One of the cases reported had been one on which he had had the opportunity to operate. The patient had been a young married woman, aged sixteen years. He had operated for laceration of the perinæum, and infection had followed. On opening the abdomen, he had ascertained that the ovaries and tubes, as well as the womb, had been free from adhesions. He had found the abscess in the left inguinal region and had opened it above Poupart's ligament and drained it thoroughly. The patient had recovered.

Dr. Henry Leaman said he had had a dozen cases confirmatory of Dr. Noble's position. One case had discharged through the bladder and another through the bowel. In one case, where the afterbirth had been removed in pieces by a midwife, a distinct tumor had formed, which afterward had disappeared. The woman was now pregnant. He believed, also, that distended tubes might heal under proper treatment. This was not after puerperal trouble, but after syphilitic infection. There was no reason why a syphilitic enlargement should not be cured.

Dr. Noble said that the conclusion which he had drawn from these facts was that the position with reference to exudates which had formed after the puerperal state should be different than it was where such exudates were found in the non-puerperal condition. As it was a fact that many of these exudates were in the broad ligament and got well if let alone, he thought that pelvic exudates following labor should be treated without operation, unless the indications of pus were very marked and there was danger of the woman dying from the absorption of pus. A goodly number of such women would get well and retain their fertility.

Exhibition of a Case of Acromegaly, with Remarks on the Treatment by Desiccated Thyreoid Gland.—Dr. Solomon Solis-Cohen presented this case to the society in order to exhibit some structural changes not found, or at least not recorded, in every case of acromegaly, and to call attention to the apparently good results of treatment with desiccated thyreoid gland.

As full details of the case would be published in the *International Clinics* (in his report of a lecture delivered some time ago to his polyclinic class), he would be brief in the present instance.

The patient, who was fifty-two or fifty-three years of age, had applied to the Philadelphia Polyclinic about eighteen months before for relief from an excruciating headache, which had for many months been so intense at times as to prevent his lying down, pressure on the scalp increasing the pain. Attention had at once been attracted to the peculiarities of the facial structures presented, and further examination had demonstrated the characteristic curvature of the back and enlargement of the hands and feet. Photographs of the patient, taken twenty years before and six years before respectively, bore out his statement that his features had materially altered within the last four years, although the later photograph showed the beginning of the change.

He had had to enlarge his hat-band twice and his shoes twice within three years. The shoes were a little longer but much broader than formerly. The hands were broadened rather than lengthened; the fingers not exactly "sausage-shaped," but thick and clumsy. Distortion of the joints was to be attributed to his occupation, and probably antedated the development of the acromegalic conditions. Part of the coarseness of the skin of the hands might likewise have been due to occupation. His hands to-day, however, were smaller than when he had first come under treatment, as shown by the tracings and measurements, and also by his statement that a pair of gloves bought some years before, which had been too small for him last year, could now be worn.

The enlargement and projection of the superciliary ridges, the lateral projection of the malar bones, the broadening and deepening of the chin, gave the face the characteristic lengthened elliptical outline. The great enlargement of the nose, the thickening and projection of the lips, the heavy folds, the deep furrows, and the somewhat greasy texture of the skin, especially of the forehead, the stiffening and projection of the auricular cartilages, completed the picture. The lower jaw did not, however, project beyond the upper jaw. The teeth were bad. The tongue was thickened and deeply fissured. The voice was deep and had a monotonous quality, the latter only partly attributable to his "boilermaker's deafness." The laryngeal and tracheal cartilages were almost if not completely ossified. The thyreoid gland could not be demonstrated. The forward thrust of head and neck from curvature of the cervicodorsal spine threw the clavicles well out from the windpipe, leaving a great hollow just above the sternum. The clavicles were enlarged, the scapulæ were enlarged, the ribs were broadened and apparently in contact, and the costal cartilages seemed to be ossified. In consequence, although the narrowing of the chest—an apparent lateral compression—and the percussion phenomena showed absence of emphysema, it would be observed that his breathing was scarcely at all thoracic. There was an almost inappreciable rise and fall of the clavicles, showing slight vertical motion of the thorax as a whole, and, on great inspiratory and expiratory exertion, an expansion of a half to a centimetre could be determined at the nipple line. Breathing was almost exclusively abdominal. This showed, as did his previous case, and some cases of Dr. Dercum's and others, that the disease involved the bones of the thorax as well as those of the extremities.

The patient was becoming feeble; his muscles were wasting, though as yet electric examination showed only quantitative change.

He had vaso-motor phenomena—flushing, occasional vertigo, and polyuria. The urine had been deficient in solids, but had not contained sugar or albumin. We had not, indeed, demonstrated anything abnormal in it. This he attributed, however, to defective methods of examination. He had no doubt that careful chemical analyses would show in the urine the results of altered metabolism. Since treatment with thyreoid powder had been instituted the quantity of urinary water had decreased and the urea content had risen. Ordinarily the thyreoid preparation increased both water and solids. Superficially the diminution of polyuria by a diuretic would seem to be an illustration of the so-called "homœopathic law." A moment's reflection, however, showed the action to be simply a correction of disordered metabolism, through which the production of toxins giving rise to polyuria was diminished. Another result of the administration of the thyreoid powder had been to completely relieve the distressing headache.

At one time, after a long absence from the clinic, the patient had returned complaining of violent sciatic pain. It had failed to yield to ordinary measures, but had disappeared after recourse to thyreoid medication. Five grains of the preparation of desiccated sheep's thyreoid exhibited by Dr. Solis-Cohen to the society last year had been given in capsule every morning.

Upon the somnolence, however, no effect had been obtained. The patient could still go to sleep upon the slightest provocation —indeed, without any. He had fallen asleep while waiting his turn at the dispensary, and had frequently missed appointments through sleeping in his chair over the time set. He said that he could keep awake, however, while at work; but as he could no longer do the hard work to which he had been accustomed, he had not for some time had steady employment.

Dr. Jackson had examined his eyes, and had found no lesion of the fundus and no error in the visual field. This went to confirm the view that hemiopia and other visual errors were merely secondary phenomena, due to pituitary enlargement, and that the latter was not necessarily a feature of the pathologic complexus. The speaker was inclined to believe that early treatment with thyreoid preparations would entirely prevent overgrowth of the pituitary body, embryologic analogy seeming to indicate that it was an attempt at compensatory hypertrophy, ill-directed and baneful only by reason of the altered position of the structure.

Book Notices.

The Care and Feeding of Children. A Catechism for the Use of Mothers and Children's Nurses. By L. EMMETT HOLT, M. D., Professor of Diseases of Children in the New York Polyclinic, etc. New York: D. Appleton & Company, 1894. Pp. 8–9 to 66. [Price, 50 cents.]

THE author states in his preface that when the practical training school for nursery maids was established in this city in 1889, the need was felt for some simple manual to put into the nurses' hands. He accordingly wrote out a series of questions and answers formulating those things that were matters of daily observation and practical hospital work. This book contains these questions and answers, and is published for the purpose of assisting mothers and nurses.

He has arranged his subject under three sections: The care of children, infant feeding, and miscellaneous.

The text is clear and simple and may be understood by any reader moderately conversant with the English language. The advice given is excellent, and covers the various subjects about which the family physician is so often questioned. The volume should be in the hands of all young mothers and of every nursery maid; and physicians may feel assured that they may recommend the book as a *vade mecum* from which their patients may acquire the information, usually so much sought for, regarding the best methods of caring for young infants.

Diseases of the Skin. An Outline of the Principles and Practice of Dermatology. By MALCOLM MORRIS, Surgeon to the Skin Department, St. Mary's Hospital, London, etc. With Eight Chromo-lithographs and Seventeen Woodcuts. Philadelphia: Lea Brothers & Company, 1894. Pp. xii–556. [Price, $3.50.]

IT has been the author's aim to present in this volume the clinical facts and the principles of treatment of skin diseases, based on the results of modern research, in an essentially clinical and practical manner.

In the first chapter, on the pathology of the skin, Metschnikoff's theory of inflammation is briefly described, and the relation of protozoa and bacteria to skin diseases is mentioned, with reference to the latest data.

In the chapter on classification the author refers to the several more important schemes of classification, and, while he propounds no formal scheme of classification, he follows the lines suggested by Unna.

The chapter on the principles of diagnosis is excellent; its practical features can not but be most useful to all that master it.

The author then considers the skin diseases under the headings of affections of the skin dependent on nerve disorder, artificial eruptions, eczema, pityriasis, psoriasis, local inoculable diseases, general inoculable diseases, diseases of the skin glands, benign and malignant neoplasms, and malformations.

The colored plates and illustrations are very good. The text is well printed, the volume is easily handled, and we believe it is destined to have an extensive and deserved popularity.

A Manual of Instruction in the Principles of Prompt Aid to the Injured. Including a Chapter on Hygiene and the Drill Regulations for the Hospital Corps, U. S. A. Designed for Military and Civil Use. By ALVAH H. DOTY, M. D., Major and Surgeon, Ninth Regiment, N. G. S. N. Y., etc. Second Edition, revised and enlarged. New York: D. Appleton & Company, 1894. Pp. xvi–304. [Price, $1.50.]

THE author has made such additions to this new edition of his excellent manual that it contains eighty pages more of text and several new illustrations.

In the chapter on antiseptics, disinfectants, and deodorants the author has incorporated the practical instructions for disinfection and fumigation published by the New York City Health Department, but why he has included instructions for the sterilization of milk for feeding infants is not apparent.

In the chapter on contusions and wounds the author disposes of his subject in a practical manner, avoiding the temptation to expatiate on the effects of missiles fired at various ranges, especially those of the latest improved projectiles.

A short but useful chapter on hygiene has been added. The final chapter on the transportation of the wounded has been elaborated by the addition of the drill regulations for the United States army.

This edition will sustain the reputation acquired by its predecessor, and the work is likely to have a wide field of usefulness.

BOOKS, ETC., RECEIVED.

Materia Medica, Pharmacology, and Therapeutics. Inorganic Substances. By Charles D. F. Phillips, M. D., LL. D., F. R. S. (Edin.), Late Lecturer on Materia Medica and Therapeutics at the Westminster Hospital Medical School, etc. Second Edition. London: J. & A. Churchill, 1894. Pp. xiv–898. [Price, 21 shillings.]

The Care and Feeding of Children. A Catechism for the Use of Mothers and Children's Nurses. By L. Emmett Holt, M. D., Professor of Diseases of Children in the New York Polyclinic, etc. New York: D. Appleton & Company, 1894. Pp. 8–9 to 66. [Price, 50 cents.]

A Manual of Instruction in the Principles of Prompt Aid to the Injured. Including a Chapter on Hygiene and the Drill Regulations for the Hospital Corps, U. S. A. Designed for Military and Civil Use. By Alvah H. Doty, M. D., Major and Surgeon, Ninth Regiment, N. G. S. N. Y., etc. Second Edition, revised and enlarged. New York: D. Appleton & Company, 1894. Pp. xvi-304. [Price, $1.50.]

Diseases of the Skin. An Outline of the Principles and Practice of Dermatology. By Malcolm Morris, Surgeon to the Skin Department, St. Mary's Hospital, London, etc. With Eight Chromo-lithographs and Seventeen Woodcuts. Philadelphia: Lea Brothers & Company, 1894. Pp. xii–556. [Price, $3.50.]

Further Remarks on the Occurrence of a Form of Nonalbuminous Nephritis other than Typical Fibroid Kidney. By D. D. Stewart, M. D. [Reprinted from the *Medical News.*]

A System of Legal Medicine. By Allan McLane Hamilton, M. D., Consulting Physician to the Insane Asylums of New York City, etc., and Lawrence Godkin, Esq., of the New York Bar. Illustrated. Volume I. New York: E. B. Treat, 1894. Pp. 8 to 657. [Price, $5.50.]

An International System of Electro-therapeutics for Students, General Practitioners, and Specialists. By Horatio R. Bigelow, M. D., Permanent Member of the American Medical Association, etc., and Thirty-eight Associate Editors. Thoroughly illustrated. Philadelphia: The F. A. Davis Co., 1894. Pp. xxxii–1160. [Price, $6.]

A Clinical Manual. A Guide to the Practical Examination of the Excretions, Secretions, and the Blood, for the Use of Physicians and Students. By Andrew MacFarlane, A. B., M. D., Instructor in Neurology and Diseases of the Chest in the Albany Medical College, etc. New York and London: G. P. Putnam's Sons, 1894. Pp. xii–138.

Traité pratique de gynécologie. Par le Dr. A. Auvard, Accoucheur des hôpitaux de Paris. Deuxième édition, revue et augmentée. Avec 655 figures dans le texte et 12 planches en couleur hors texte. Paris: Octave Doin, 1894. Pp. 870. [Prix, 18 *fr.*]

Études de chirurgie infantile. Les hernies inguinales de l'enfance. Par le Dr. G. Félizet, Chirurgien de l'Hôpital Tenon. Avec 73 figures dans le texte. Paris: G. Masson, 1894. Pp. xiv–42. [Prix, 10 *fr.*]

Analyses of Twelve Thousand Prescriptions. Being Statistics of the Frequency of Use therein of Official and Unofficial Preparations. Compiled by W. Martindale, F. C. S. London: H. K. Lewis, 1894. [Price, 2*s.* 6*d.*]

Further Observations on Chronic Relapsing Appendicitis—Eighteen Cases, with One Death—List of Four Hundred and Fifty Operations. By William T. Bull, M. D., New York. [Reprinted from the *Medical Record.*]

Extra-uterine Pregnancy simulated by a Small Tumor of the Ovary; Operation; Recovery. By William H. Morrison, M. D., Philadelphia. [Reprinted from the *Medical News.*]

The Electrical Treatment of Fibroid Tumors. By G. Betton Massey, M. D., Philadelphia. [Reprinted from the *Journal of the American Medical Association.*]

Certain Erroneous Principles and Methods in Gynæcology. By G. Betton Massey, M. D. [Reprinted from the *Annals of Gynæcology and Pædiatry.*]

Electricity in the Treatment of Chronic Prostatitis and Other Conditions underlying Impotence in Men. By G. Betton Massey, M. D. [Reprinted from the *University Medical Magazine.*]

Is Laryngitis Sicca and Stoerke's Blennorrhœa of the Larynx One and the Same Disease? By W. Freudenthal, M. D. [Reprinted from the *Annals of Ophthalmology and Otology.*]

Severe Hæmorrhages from the Nose. By W. Freudenthal, M. D. [Reprinted from the *Post-graduate.*]

Conservatism in Accidental Surgery. By Edmund J. A. Rogers, M. D., Denver. (Read before the Colorado State Medical Society.)

Fracture of the Skull; Trephining; Retro-anterograde Amnesia; Recovery; Death One Month subsequently from Other Causes; Autopsy. By Edmund J. A. Rogers, M. D., and J. T. Eskridge, M. D., Denver, Col. [Reprinted from the *Medical News.*]

Rupture of the Uterus. By Magnus A. Tate, M. D., Cincinnati. (Read before the Cincinnati Academy of Medicine.)

The Treatment of Pulmonary Tuberculosis by the Subcutaneous Use of the Chloride of Gold and Sodium with the Iodide of Manganese. By William S. Boardman, M. D., Boston. [Reprinted from the *Boston Medical and Surgical Journal.*]

Ophthalmia Neonatorum; Contraction of the Eyelids; Glaucoma; Grattage for Granular Lids. By L. Webster Fox, M. D., Philadelphia. [Reprinted from the *Medical Bulletin.*]

History of the Drop-bottle. By L. Webster Fox, M. D. [Reprinted from the *Ophthalmic Record.*]

Some Clinical Notes on Eight Cases of Exophthalmic Goitre. By J. Arthur Booth, M. D. [Reprinted from the *Manhattan Eye and Ear Hospital Reports.*]

A Successful Case of Cæsarean Section. By Philander A. Harris, M. D., Paterson, N. J. [Reprinted from the *Medical Record.*]

Flexions of the Uterus and their Treatment with a Painless Self-supporting Intra-uterine Stem. By Frank C. Ferguson, M. D., Indianapolis. (Read before the Marion County Medical Society.)

Ueber den Werth methodischer Hörübungen für Taubstumme und für Fälle von nervöser Taubheit im Allgemeinen. Von Dr. Victor Urbantschitsch. [Sep.-Abdr. aus der *Wiener klinische Wochenschrift.*]

Reports of the Board of Managers, Physician-in-chief, and the Treasurer of the Corporation of the Friends' Asylum for the Insane, Philadelphia. Presented at the Annual Meeting, Third Month, 21, 1894.

Miscellany.

The Causes and Treatment of Infantile Diarrhœa.—The *Journal de clinique et de thérapeutique infantiles* for May 24th publishes a paper on this subject by Dr. G. Variot in which he says that the majority of infants who are attacked with diarrhœa and vomiting are those artificially fed or those who are given solid food at a time when their digestive organs have not attained their full activity and power. Where there is hereditary syphilis or scrofulo-tuberculosis, the children are more susceptible to digestive troubles, as these affections greatly impair the young organism, the digestive organs of which are in a constantly changing condition. In these cases diarrhœa is only an epiphenomenon, and it is not astonishing if it resists the usual means for combating it, for it may be combined with tuberculous lesions of the intestine or of the mesenteric ganglia.

Children nursed exclusively at the breast are rarely attacked with persistent diarrhœa, although, even in this case, too frequent nursing will cause a gastro-intestinal dyspepsia, accompanied by repeated vomiting and diarrhœa. A constant change also of wet nurses is, again, a cause of this affection in infants.

With regard to solid food, physicians have insisted that milk is the only diet for infants, but it seems almost impossible, says Dr. Variot, to impress this simple fact particularly upon the common people, who, in France, and in America, according to Dr. L. Emmett Holt, obstinately cling to the idea that the sooner the children are fed on solid food the quicker they will grow. It is generally admitted that starchy food should not be given to infants before dentition occurs. At this age the salivary and intestinal glands are powerless to saccharize the starchy substances, which irritate the mucous membranes and undergo injurious fermentations. In some cases which had come under the author's observation, where solid food had been given to the children, the abdomen was distended and dilated, and at the linea alba there was a true eventration, so that one or two fingers could be introduced between the two recti muscles, and this eventration indicated that the abdominal wall had been in some way forced open by the flatulent distention of the intestines. This flatulence was without doubt connected with the abnormal gaseous fermentation of the starchy substances.

Another cause of diarrhœa in infants is the quality of the milk, which is often inferior, and the milk which is sold to the poor, especially in large cities, is often dirty and adulterated. Much sickness and many deaths also are attributed to the use of the nursing bottles with long rubber tubes, which are so difficult to clean properly, and to the rapid alterations of the milk, into which the breath of the child is constantly passing; the milk also is often diluted with impure water and contains septic germs which provoke very dangerous fermentation. The statistics of deaths from diarrhœa, drawn up by different observers, all go to show that the mortality is greater in June, July, and August, and at this time the digestive organs should be carefully watched, particular attention being paid to the quality of the milk and to its sterilization; if necessary, the quantity should be somewhat reduced at each meal. Some writers have observed epidemics of diarrhœa, and some cases of contagion. Although not much importance is attached to the latter, it is well, the author says, to take children to the country during the hot weather. Another cause of diarrhœa is dentition, the effects of which should not be neglected. The author does not share the popular idea that diarrhœa from this cause is salutary and needs no attention; at this time the digestive organs of infants should be carefully watched. As soon as the diarrhœa appears the child should not nurse oftener than every three hours; if it is artificially fed, the milk should be diluted with a third of limewater. Before the child nurses a teaspoonful of the following mixture should be given: Distilled water, two ounces; lactic acid, half a drachm; tannin dissolved in alcohol, eight grains; and syrup of quince, five drachms.

For a child fed artificially, the author always prescribes sterilized milk, and gives careful directions for the antiseptic cleansing of the bottle. The best proof, he says, that diarrhœa, if it is treated from the first day of its appearance, is due to the bad quality of the milk, is that it yields to treatment in two or three days after the administration of sterilized milk. In some of the author's cases this was the only agent used to effect a recovery from attacks of diarrhœa due to bad milk, toast-water, etc. If sterilized milk is properly prepared and of good quality, it is the best food for children artificially fed, as the sterilization destroys all morbid or noxious germs, and the author has observed that, as a rule, it is well borne by infants.

The Nucleins and Nuclein Therapy.—In an address delivered before the Illinois State Medical Society by Dr. Victor C. Vaughan, of Ann Arbor, a report of which is published in the *Journal of the American Medical Association*, he says that recent investigations have indicated that a knowledge of the nucleins would probably be of service to practitioners, also that some of them promise to be of therapeutical value. Miescher, he says, was the first to study the nucleins with a fair appreciation of their importance, and it was he who named them. The corpuscles from pus were obtained by the addition of a dilute solution of sodium sulphate, subsidence, and decantation. Then they were digested with pepsin and hydrochloric acid so long as peptones were formed; this left the nuclei of the cells. These were found to be rich in phosphorus and soluble in dilute alkalies. From the alkaline solution the substance is precipitated by dilute acids. The lability of the nuclein molecule and its power of recuperation after partial decomposition have been demonstrated by Miescher, and it has been shown that certain organic and inorganic bases may be placed within or drawn from the nuclein molecule without any visible modification of the character of the substance. Hoppe-Seyler has prepared nucleins from yeast; Lubavin, from casein; Plosz, from the nuclei of the blood-corpuscles of birds; and Miescher, from the yolks of eggs.

Dr. Vaughan and others have experimented with nuclein obtained from yeast, eggs, the spleen, the thyreoid gland, and the testes, and all of them have been found to be distinctly bactericidal. They have also demonstrated that the germicidal constituent of blood serum is a nuclein which is undoubtedly furnished by the multinuclear white corpuscles. When it had been shown that the nucleins were germicidal, it remained to be seen whether or not they might be used to prevent or arrest the growth of germs in the animal body. The author gives a long and comprehensive account of his experiments with rabbits and guinea-pigs in which he used a solution containing about two per cent. of yeast nuclein, and from the results obtained he draws the following conclusions: 1. Rabbits and guinea-pigs may be protected against virulent cultures of the diplococcus of pneumonia by previous treatment with hypodermic injections of a solution of yeast nuclein. 2. The immunity thus secured is not directly due to the action of the nuclein as a germicide. 3. The process of this immunity is an educational one, and depends upon the stimulating effect of the nuclein upon an organ whose function it is to protect the body against bacterial invasion. 4. The longer the use of the nucleins is continued and the more frequently they are administered, the more complete is the immunity obtained. 5. In order to obtain this immunity, inoculation with the germ must follow soon after the last treatment with the nuclein. Dr. Vaughan has also made some attempts to produce immunity from tuberculosis in guinea-pigs, but so far the results have not been altogether satisfactory, and in some cases they have been contradictory. He believes the nucleins to be entirely free from poisonous properties. He has injected subcutaneously in a man an ounce and a half of a two-per-cent. solution of yeast nuclein at a time without any effect except the temporary irritation produced by so much fluid being injected, and he has also given from six to eight ounces of the same solution by the mouth during twenty-four hours without any bad effect. In some persons, however, a much smaller dose might cause a marked elevation of temperature. For instance, in one patient, a large and apparently robust man who was suffering from muscular rheumatism, and in whom tuberculosis of the neck of the bladder had recently been detected, a hypodermic injection of forty drops of the two-per-cent. solution of yeast nuclein caused the temperature to rise from two to four degrees. In a few cases the injection of eighty drops or more has been followed by a chill and an elevation of the temperature, and a redness like that of erysipelas has appeared and lasted for about twenty-four hours.

In tuberculous patients the effect of repeated injections has been a lowering of the temperature. Dr. Vaughan has used daily injections of the nuclein for six months or more without observing any injurious effects from their continuous use. In twelve cases of membranous amygdalitis he employed the nucleins alone with good results, the fever disappearing within twenty-four or forty-eight hours at the most. In four cases of streptococcus diphtheria good results were also obtained from their employment. Still another case where it was used successfully was that of a man who had been under treatment for an indolent ulcer of the leg. After other measures had been tried, the nuclein was used alone, and eighty minims of a two-per-cent. solution of yeast nuclein were injected into the tissues around the ulcer. Eight injections were made and the ulcer healed perfectly. Two months have passed since the last treatment, and there has been no return of the trouble.

The action of the nucleins in giving immunity from pneumonia germs is not due to its direct germicidal effect, and the author says that we must look for curative agents in one or the other of the following classes: 1. Non-poisonous germicides of cellular origin. 2. Substances which stimulate the activity of the organs whose function it is to protect the body against these diseases. While there are in the nucleins substances of the first class, he believes that the nucleins belong also to the second class. The phagocytic theory, he says, teaches that the multinuclear white corpuscles are the natural defenders against bacterial invasion, and if the nucleins are to prove of any value in the treatment of tuberculosis, it will probably be due to the fact that they increase the multinuclear white corpuscles. However, the author thinks that it is only in recent cases that any benefit may be expected, and even in regard to these there must be more abundant material and a longer experience in order to speak with any certainty.

Opium with Calcium Chloride as a Hæmostatic.—The *Indian Medical Record* for May 1st publishes an article on this subject by Dr. William Huntly, of Kotah, who has used and tested the value of this combination in different kinds of hæmorrhage. He cites the following cases as being the most important examples of the various uses to which it may be put: A man came to him on the morning following the extraction of a lower molar tooth. The bleeding had been very severe, and blood still flowed from the gum. The author stuffed the cavity with lint soaked in liquor ferri perchloridi, but this did not stop the bleeding. The man was very weak. Remembering the effect of opium, he gave him a full dose of the tincture, and in less than a minute the pupil contracted and the bleeding stopped. The patient was then ordered to take twenty grains of calcium chloride in an ounce of rain-water every two hours until he had taken two drachms. The bleeding never recurred. In another case, after the extraction of a tooth, the bleeding was arrested by the administration of opium, but returned on the following day, when the author gave the patient calcium chloride, and by evening the bleeding had stopped. In this case the use of calcium chloride was continued for three days. In the third case, vomiting of blood had gone on all night, and every native remedy had been tried unsuccessfully. The author gave some soap pills, and, as the patient was very anxious and restless from the loss of blood, he told him that the bleeding would not return after swallowing them. This was somewhat hazardous, Dr. Huntly remarks, but the diagnosis was clear that the hæmatemesis was due to an irritant powder swallowed by mistake. After using other measures and calcium chloride, there was no recurrence of the bleeding.

In a case of severe epistaxis the same measures had proved effectual without resorting to plugging. In cases of hæmaturia, in the author's experience, the use of opium has not been successful. In these cases, he says, the diagnosis is often obscure, and the practical value of opium in cases of uræmic coma, in which it re-establishes the flow of urine, leaves the question of the mode of action of the opium on the kidneys still a subject for clinical investigation. In his cases opium was given to stem the bleeding for the time, and calcium chloride seemed to justify the statements put forward on theoretical grounds, for it promoted coagulation. Dr. Saundby, he says, has obtained good results in a case of purpura hæmorrhagica from six-grain doses of calcium chloride repeated every two or four hours. Dr. Huntly thinks better results are to be obtained from the combination than from either drug alone, although opium by itself has often proved successful, as Nature mends the broken surfaces while the opium is exercising its restraining influence; but when calcium chloride is added, Nature's efforts are supplemented. Opium acts on the smaller arterioles and capillaries, while calcium chloride acts through and on the blood, and the combination is all the more valuable because their spheres of action do not clash. As a combination, he thinks that calcium chloride and opium should be found superior to lead and opium.

The Disinfection of Rooms Infected with Tuberculous Products.—Professor Sheridan Delépine, of Manchester, in an article on this subject published in the *Medical Chronicle* for May, says that experimenters have shown that the action of a solution of chloride of calcium is almost universal and very rapid, that it is due to the liberation of chlorine, and that the presence of acids and elevation of temperature accelerate its action. He gives an account of extended experiments, the results of which, he says, justify him in saying that the best method of disinfecting houses that have been contaminated by tuberculous patients is with chlorinated lime, which should be carried out in the following manner: 1. A solution of chlorinated lime (1 in 10) should be prepared. 2. The walls, ceilings, and floors should be washed with this solution applied in the same way as whitewash. 3. This process should, for safety, be repeated three or four times, starting each time at the same corner of the room, so that each layer will have time to penetrate into the paper and the woodwork and become partly dry before the next coating is applied. 4. The room should then be closed as well as possible, a small, safe petroleum stove being first placed in the middle of the room, and precautions taken to prevent any chance of fire. Over this stove a large tin basin full of water or chlorinated-lime solution should be placed. (By a simply devised water-bath arrangement, a small capsule full of strong acetic acid or hydrochloric acid might be placed over the boiling water, and in this way acidity of the air would be secured. This would cause a more rapid setting free of chlorine.)

In this way, says the author, disinfection should be completed in less than three hours. Some of the additional precautions which are recommended may not be absolutely necessary. The use of hydrochloric acid is the most objectionable addition from a practical point of view, for it causes great damage to metallic fittings. Chlorinated lime does not spoil things so much as would be expected, and can be used in rooms from which all hangings and carpets have been removed without any fear of damage, if the walls and ceilings are not decorated with valuable paintings or papers.

The New Hampshire Medical Society will hold its one-hundred-and third annual meeting in Concord, on Monday and Tuesday, June 18th and 19th, under the presidency of Dr. Samuel P. Carbee, of Haverhill. The programme includes the following titles: On the Prevention of Communicable Diseases, by Dr. D. Edward Sullivan, of Concord; Sleep, How Best Induced in Certain Pathological Conditions, by Dr. J. B. Raynes, of Lebanon; On Puerperal Infection, by Dr. J. Elizabeth Hoyt, of Concord; Retrospective Glances, by Dr. A. G. Straw, of Manchester; Bone Surgery, by Dr. D. S. Adams, of Manchester; Empyema, by Dr. William H. Lyons, of Manchester; On the Differential Therapeutics of Strophanthus and Digitalis, by Dr. W. K. Wadleigh, of Hopkinton; On the Pathology and Methods of Treatment of Hypertrophic and Atrophic Rhinitis—with Special Reference to the Work of the General Practitioner, by Dr. Albert Pick, of Boston; On Laceration of the Cervix Uteri, by Dr. F. A. Stillings, of Concord; Glimpses of Fifty Years in the Medical Profession, by Dr. Cyrus K. Kelley, of Plymouth; On Sanitation in Mexico, by Dr. G. P. Conn, of Concord; On the Importance of the Early Recognition of Certain Diseases of the Eye by the General Practitioner, with Suggestions regarding Management, by Dr. H. W. D. Carvelle, of Manchester; and the Discussion opened by Dr. George Cook, of Concord; president's address.

The Association of American Anatomists.—At the recent annual meeting the following new members were elected: Dr. John A. Boger, assistant demonstrator of anatomy, University of Pennsylvania; Dr. H. B. Ferris, assistant professor of anatomy, Yale University; Dr. Robert L. Greene, professor of anatomy, University Medical College and Western Dental College, Kansas City, Mo.; Dr. William Keiller, professor of anatomy, University of Texas; Dr. Joseph Leidy, assistant demonstrator of anatomy, University of Pennsylvania; Dr. Mary B. Moody, of New Haven, Conn.; Mr. Robert O. Moody, of Yale Medical School; Dr. Charles D. Smith, professor of physiology, Bowdoin College; Dr. William O. Stillman, of Albany, N. Y.; and Dr. W. C. Woodward, of the University of Georgetown, Washington.

The officers elected for the ensuing term were Dr. Thomas Dwight, of Harvard University, president; Dr. Burt G. Wilder, of Cornell University, and Dr. F. J. Shepherd, of McGill University, Montreal, vice-presidents; Dr. D. S. Lamb, of the Army Medical Museum, Washington, secretary and treasurer; Professor C. L. Herrick, of Denison College, Granville, O., delegate to the Congress of American Physicians and Surgeons; Dr. D. K. Shute, of Columbian University, Washington, alternate; and Dr. Theodore M. Gill, of the Smithsonian Institution, Washington, to fill a vacancy in the executive committee.

The Treatment of an Acute Attack of Hepatic Colic.—Dr. A. F. Plicque, formerly an interne of the Paris hospitals, discusses this subject in the *Gazette médicale de Paris* for May 26th. An attack of hepatic colic, he says, may present itself under one of two forms: 1. The very acute form, exceedingly painful, which fortunately is not usually of very long duration. 2. The more subdued form, apparently more easily borne, but in which the paroxysm is more prolonged, and after which a discouraging succession of attacks often occurs. In the former the prime indication is to allay the pain. In the second form the most important indication is to facilitate the passage of the calculus. In the very acute form the chief complications are ungovernable vomiting, paresis of the heart, and reflex pulmonary congestion. In the prolonged form chief attention should be paid to the danger of biliary infection. In the absence of reflex complications, many others of a mechanical nature may supervene relating to the incarceration or the faulty direction of the calculus, but their treatment is rather that of biliary lithiasis than that of an attack of hepatic colic. In attempting to allay the pain in an acute attack we can not, owing to the vomiting, count upon medicines given by the mouth. External anodyne applications produce hardly any relief. Compresses moistened with chloroform give rise to tolerably lively rubefaction, and are somewhat more efficacious. Very hot poultices moistened with forty drops of laudanum may also be tried, but applications of ice should be avoided. The principal measures are enemata of chloral and laudanum and subcutaneous injections of morphine. The chloral enemata should be rather concentrated. As an example, the author suggests one composed of thirty grains of chloral hydrate, the yolk of an egg, and four ounces of warm water. The opiated enema may contain twenty drops of laudanum in an ounce of water. As under other circumstances, a large warm enema should be given before the one that is medicated. These in themselves have a perceptible sedative action. The use of subcutaneous injections of morphine should not be resorted to until the measures previously mentioned have failed, and for the first dose, in a patient not accustomed to the drug, an eighth of a grain should not be exceeded, and atropine should not be added to the solution of morphine unless the liver is performing its functions well. Sometimes morphine increases the vomiting, and sometimes it is powerless to allay the atrocious pain; in that case it becomes necessary to resort to inhalations of chloroform. In less acute attacks we may give syrup of chloral, antipyrine in doses of from thirty to sixty grains in the course of twenty hours, or pills containing an eighth of a grain each of extract of belladonna and extract of opium, of which eight or ten may be taken in the course of twenty hours. Warm immersion baths lasting for an hour are very useful, but they are contraindicated in cases of weakness of the heart. In attacks that are very moderate in intensity, but prolonged, external applications are preferable to narcotics given internally. Applications of Pacquelin's cautery over the region of the liver, or in vigorous subjects the application of a few leeches, often give great relief. If the pain that radiates to the right shoulder is particularly severe, it will be well to apply methyl chloride in the form of spray or by painting it on. This drug has indeed been applied directly to the region of the liver itself with success.

Three drugs are of use in facilitating the expulsion of the calculus. They are olive oil, glycerin, and amylvalerianic ether. Violent purgatives are to be avoided, for they would frequently cause such accidents as the incarceration of the calculus and rupture of the biliary passages. Cautious massage is soothing to the patient and is free from danger, but not much reliance is to be placed on it as an agent for facilitating expulsion. The use of electricity is to be avoided. Olive oil may be given to the amount of six ounces in two portions, a quarter of an hour apart. It must be of very good quality. After having taken the oil, the patient should remain lying on his right side for several hours. In case the oil is very repugnant to the taste, it may be administered through a stomach-tube; given in this way it is not so apt to be vomited as when it is taken directly by the mouth. Glycerin should be given in large doses, as much as from an ounce to an ounce and a half, and the best way of administering it is in a glass of Vichy water. Amylvalerianic ether has been recommended by Chauffard in doses of from four to six capsules [the amount of the contents not specified] in the course of twenty-four hours. Its action seems to be superior to that of the old mixture of ether and oil of turpentine.

As regards the complications, vomiting should be treated by the ordinary measures, such as Seltzer water, grog, iced champagne, and potio Riverii [made by mixing equal parts of a solution of two parts of potassium bicarbonate in fifty of water with fifteen of sugar and a solution of two parts of citric acid in fifty of water with fifteen of syrup of citric acid]. If the vomiting is prolonged and interferes with the ingestion of the necessary amount of food, an attempt should be made to nourish the patient by means of a tube. Counter-irritation over the liver is often very efficacious. Weakness of the heart should be treated with stimulating frictions, dry cupping, etc. Digitalis should not be used. In case there is a tendency to syncope, subcutaneous injections of caffeine may be employed, four grains at a time, from two to four times a day. These injections of caffeine may be alternated with injections of camphor. Thirty grains of camphor may be dissolved in two drachms and a half of sterilized olive oil, and from one to three syringefuls of the solution may be given in the course of a day. Pulmonary congestion may be combated by the semi-recumbent or the lateral-recumbent posture, and especially by the application of dry cups. In such cases antimonials should be avoided. Alcohol in moderate doses is very useful. In case of fever, indicative of biliary infection, intestinal antisepsis should be attempted. For this purpose salol is the best agent. It may be given in daily amounts of from thirty to sixty grains, in capsules of seven grains each. The patient should take a large glass of milk after each meal. Constipation is to be combated, not by violent purgatives, but by gentle laxatives, such as saline waters in small doses, with a mild preparation of jalap and pills of an eighth of a grain each of extract of opium and extract of hyoscyamus. Prudence should be exercised in the administration of calomel, which at first sight seems indicated as a cholagogue, as a purgative, and as an antiseptic. The flow of bile which it provokes often increases the colic. As a remedy for the fever itself, we may employ sulphate of quinine, preferably in the form of suppositories or enemata. Salicylate of sodium, to the daily amount of from forty-five to sixty grains, appears to have a special action against biliary fever. In some cases it seems also to aid in allaying the pain. In case the salicylate fails, we may try tincture of boldo, from ten to thirty drops daily. The action of the skin should be kept up carefully. The diet should be restricted to milk and vegetables, and it may be useful to add to the milk some alkaline water, such as that of Vals or Vichy.

"Falling of the Palate."—The *Journal des sciences médicales de Lille* for April 14th publishes an article on this subject in which the author gives a brief account of his experience in cases of this kind. "Falling of the palate," he says, plays an important part among the common people; all affections of the mouth or the throat which can not be accounted for by cold are attributed to prolapse of the uvula, or, as they call it, "falling of the palate." Often, he says, patients have come to him and said that they had a sore throat, that they could not swallow, and consequently that they thought they had "falling of the palate." In spite of himself, he continues, he has burst out laughing before the scandalized patients, and all his attempts to dispel such an idea have proved unavailing, for they still persisted in it. One patient asserted that a midwife had told her so, also that her child had had it for six months, and would have been ruined if the midwife had not put the palate back again into place. There are specialists for this mysterious operation, midwives and old women, who make a reputation in this particular branch. They carefully support and encourage this idea, the former because of the material profit accruing from it, and the latter partly because they like the work and partly because they gain a certain glory from it. It is therefore not to be wondered at, says the author, that he can not convince his patients to the contrary. It seems to him good policy to make some concessions, so he willingly agrees with his patients that the palate has really been somewhat displaced, but that, nevertheless, there have been other troubles, such as angina, laryngitis, etc., thus sparing the patients' feelings and their cherished tradition; then too, he says, his own medical convictions are not seriously disturbed.

Prolapse or hypertrophic prolongation of the uvula has no significance in pathology except to explain certain rebellious coughs produced by tickling at the base of the tongue, and all other troubles attributed to it are due to the old tradition and to human folly. The author cites the following instance: One evening a man entered his office hastily, apparently in great terror, for his face was pale and his eyes were wild and haggard. He told the author, with much difficulty, that he could not speak, that he was suffocating, and that he did not know what he had in his throat, but that some one had told him that his "palate had fallen down." All this time a bloody, sticky, and viscous saliva ran abundantly from his mouth. On examination, a cylindrical body about two centimetres in length was seen at the bottom of the throat; it was as large as the little finger, of a livid, violaceous color, and surrounded with bloody mucosities. It was the uvula which had become enormous. Naturally very long in this man, it had become œdematous under an attack of angina, and, probably in an effort to cough, it had become bent at its junction with the velum palati in such a manner as to make it protrude directly forward into the buccal cavity. The writer pushed it back, which at once allayed the great fear under which the man had evidently been laboring, and thus the author, although not a specialist in such matters, had replaced the "fallen palate." Perhaps, he says, his colleagues will say that it is a loss of time to turn one's attention to such trifles, which are not worthy of appearing in print.

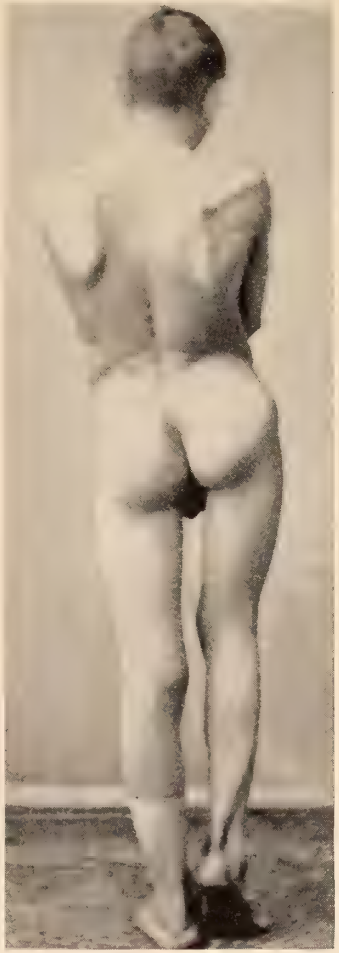

FIG. 3.

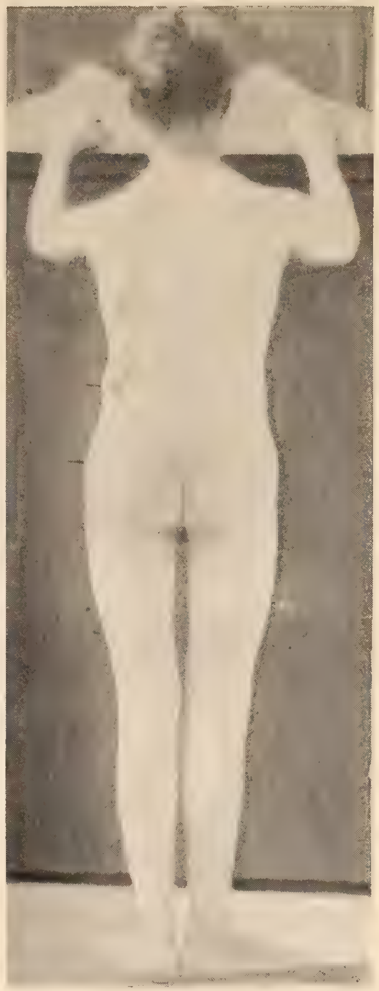

FIG. 4.

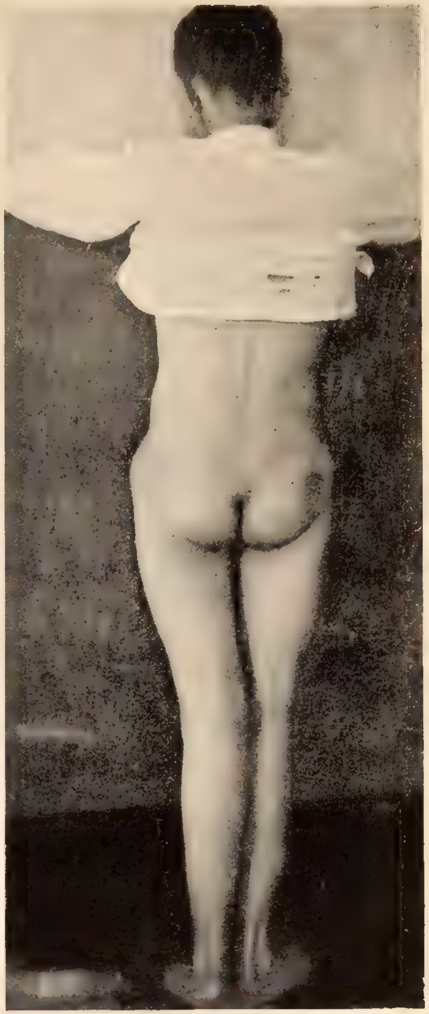

FIG. 5.

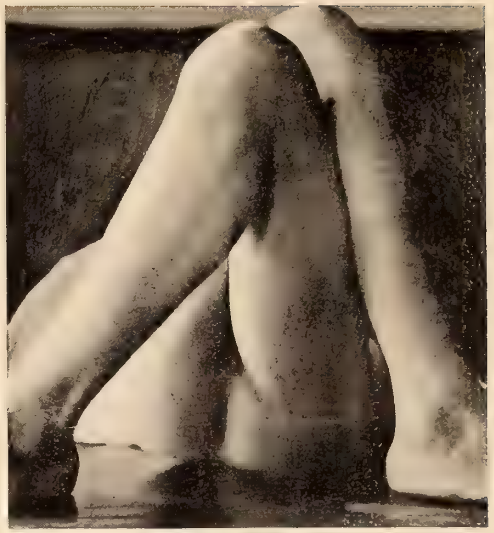

FIG. 6.

FIG. 3.—Photograph of Case I, April, 1894. Shows the apparent shortening of the right leg, the prominence of the trochanter, the adduction and compensatory tilting of the pelvis.

FIG. 4.—Photograph of Case II, June, 1893.

FIG. 5.—Photograph of Case II, September, 1893. Shows, when contrasted with Fig. 4, the relative prominence and elevation of the trochanters, also the absence of the normal lumbar lordosis.

FIG. 6.—Photograph of Case II, September, 1893. Shows the involuntary crossing of the legs in flexing the thighs on the body.

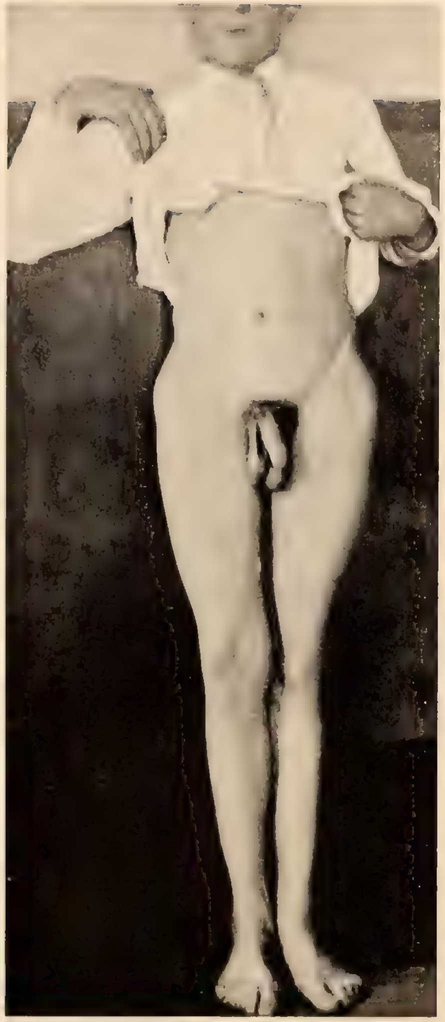

Fig. 7.

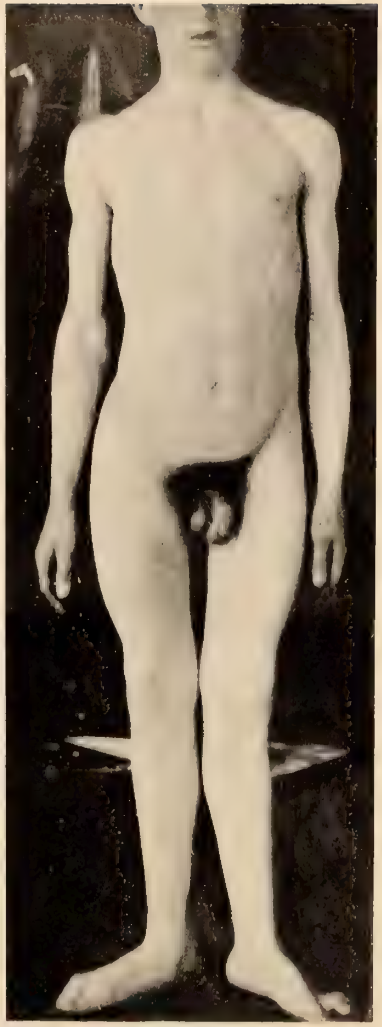

Fig. 8.

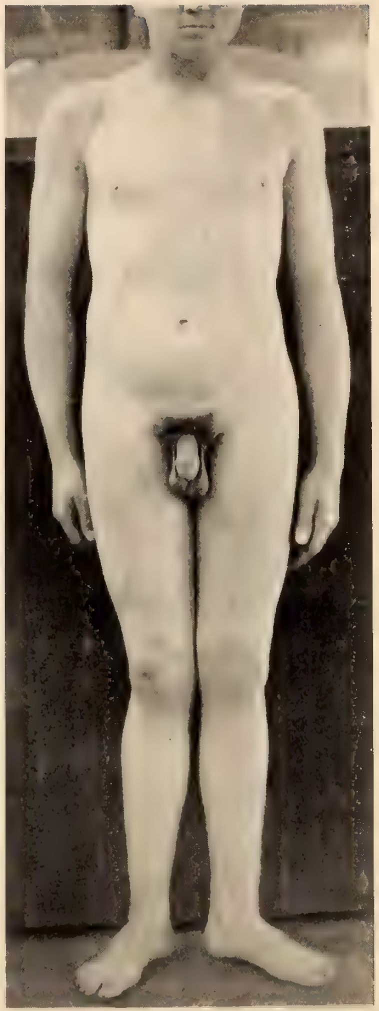

Fig. 9.

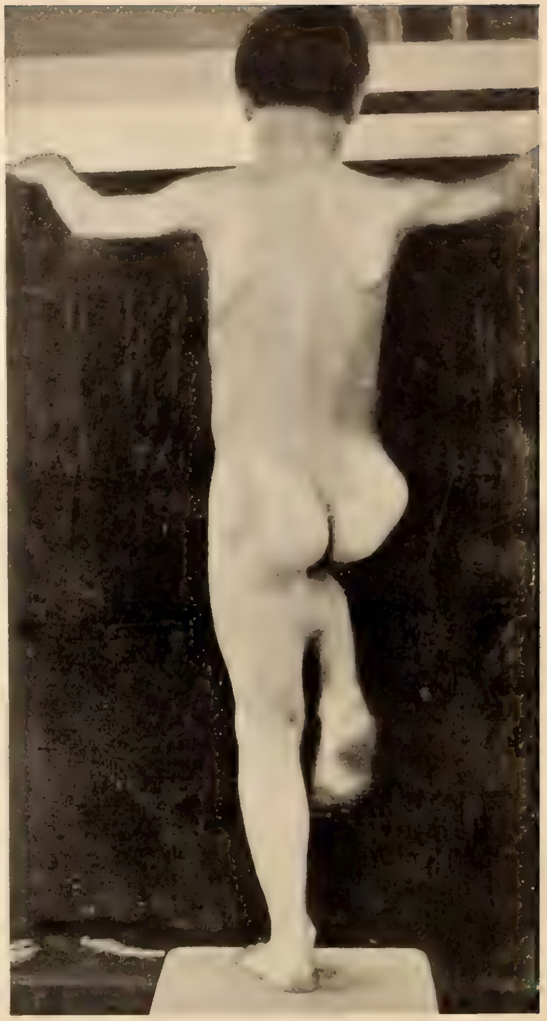

Fig. 10.

Fig. 7.—Photograph of Case II, September, 1893. Shows the prominent trochanters.

Fig. 8.—Photograph of Case II, May, 1894. Shows the apparent shortening of the legs relative to the length of the body as contrasted with Fig. 7.

Fig. 9.—Photograph of Case III, March, 1894. Shows the slight prominence in the left trochanteric region, the slight tilting of the pelvis, and the knock-knee on the opposite side.

Fig. 10.—Photograph of Case IV, March, 1894. Shows the prominent trochanter on the right side, and especially the effect of flexion of the thigh in increasing the deformity.

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Original Communications.

OBSERVATIONS ON BENDING OF THE NECK OF THE FEMUR IN ADOLESCENCE,

WITH PARTICULAR REFERENCE TO THE DIAGNOSIS AND SIGNIFICANCE OF THE AFFECTION.*

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It is proposed in this paper to call attention to a deformity at the hip joint that develops in adolescence under the same conditions as the other more familiar deformities of the lower extremity, most often in those who, at a period of rapid growth, of weakness and instability of the bones, are subjected to overwork or strain by occupations that require long standing or the carrying of heavy weights.

In this sense overwork is a relative term, since only a small proportion of individuals in a particular occupation break down, while similar deformities may appear in those who have not been subjected to these exciting causes. In many instances, therefore, one must recognize predisposing causes to satisfactorily explain a given deformity—such as the assumption of improper attitudes; or an inherited predisposition to deformity; or actual weakness of structure, either general or local; or slight deformities acquired in childhood, the effect of weakness or rhachitis, or of injury or disease, which increase under favorable conditions in later life.

The effect of this disproportion between the work to be performed and the strength of the supporting structures is most often seen in the member subjected to greatest strain in the production of flat-foot, which, indeed, may develop at any age and under a great variety of conditions; less frequently in distortion at the knee, and far less often in bending of the neck of the femur, which may or may not be associated with the preceding deformities.

The symptoms of this type of progressive deformity of the lower extremity in adolescence vary according to the function of the joint affected, the rate of progress, the extent and duration of the deformity, the secondary changes induced, and their effect upon the gait and posture of the individual; but, in general, they are weakness, awkwardness, local pain on exertion, and stiffness in the affected joint in changing from a period of rest to activity.

It is the pain of flat-foot, not the deformity, which impresses the patient. At the knee joint it is the deformity, not the pain or disability, for which advice is asked, and in the analogous deformity at the hip it is often the disability, rather than pain or deformity, that attracts attention.

It is only in very recent years that an affection so common as flat-foot has been generally recognized or treated by physicians, and it is therefore not strange that a comparatively rare condition, in a joint so deeply seated and concealed by overlying muscles, has attracted so little notice.

In 1889 E. Müller* reported four cases of bending of the neck of the femur as a new type of disease, of which the symptoms were presented as follows:

In adolescence, without apparent cause or following slight injury, the patient begins to limp and to complain of fatigue and pain about the affected joint on exertion. Shortening of the limb is soon apparent, and is caused by elevation of the trochanter above Nélaton's line. The limb is usually slightly rotated outward, extended, or slightly flexed. The motion of the joint is somewhat limited, particularly in abduction; there is no local swelling or tenderness on pressure.

The ages of the patients reported were sixteen, seventeen, eighteen, and nineteen years, and in all the deformity was on one side only.

A specimen of the deformity was in one case obtained by resection. The joint surfaces were found to be perfectly normal; the neck of the bone was depressed to a right angle with the shaft (Fig. 1). Section showed no evidence of disease or change other than that of the internal structure, according to the altered condition of weight and function.

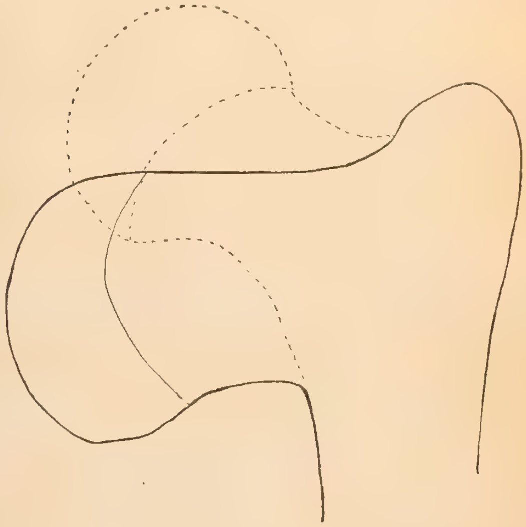

Fig. 1.—Outline of the depressed neck of the femur in Müller's specimen, contrasted with the normal position shown by the dotted line.

Shortly after the publication of Müller's paper, Rotter † presented to the Medical Society of Munich a case of bending of both femoral necks in a boy of fifteen. The symptoms were fatigue and pain on exertion, an awkward rolling gait caused by adduction of the limbs, prominent trochanters elevated above Nélaton's line, and moderate restriction of motion. No evidence of local disease was present.

A specimen of very great deformity of the neck of the femur was obtained by Hoffa* by resection of the joint. The patient, a girl of fourteen, had begun to limp at the age of three years without known cause; shortening of the leg had steadily increased, unaccompanied by any symptoms other than limp and fatigue on exertion. The appearances were somewhat like those of congenital dislocation of the hip—great prominence and elevation of the trochanter to seven centimetres above Nélaton's line; no marked restriction of motion in any direction.

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* Read before the American Orthopædic Association, at Washington, May, 1894.

* Ueber die Verbiegung des Schenkelhalses im Wachsthumsalter. Ein neues Krankheitsbild. *Beiträge zur klin. Chir.*, 1889, Bd. iv, S. 137–148.

† Ein Fall von doppelseitiger rhachitischer Verbiegung des Schenkelhalses. *Münchener klinische Wochenschrift*, Aug. 12, 1890.

The joint was normal, but there was such depression of the neck of the femur downward and backward that the head of the bone rested on the trochanter minor at an angle of 60° with the shaft as contrasted with the normal of 128° (Fig. 2). Section showed change in structure but no evidence of previous disease.

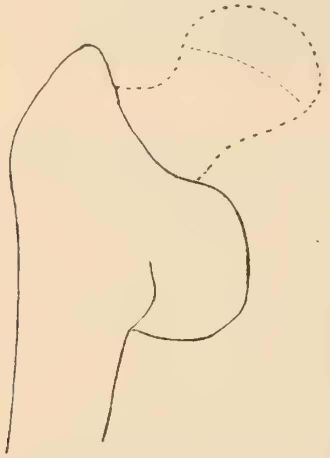

Fig. 2.—Outline of the deformity in Hoffa's specimen. The dotted line shows the normal position.

These cases represent the meager literature of the subject which has apparently attracted no attention in this country up to the present time.

During the past two years four examples of this affection have come under my observation.

I present the histories of the patients, somewhat in detail, with photographs showing the appearances and effect of the deformity, in the hope that one of the obscure affections of the hip joint may be recognized and more effectively treated than under such diagnoses as periostitis, tumor, dislocation, rheumatism, hip disease, or paralysis, as in some of the cases to be reported.

Case I.—A well-nourished boy, fifteen years of age, came to the Hospital for Ruptured and Crippled on June 7, 1892. There was a marked limp on the right side and evident shortening of the leg, for which a high shoe was worn.

One year before, without known cause and without symptoms, a gradually increasing limp was noticed, and in six months it was necessary to apply a cork sole to the shoe to compensate for the shortening of the leg.

On examination, the appearances were those of congenital dislocation of the hip—that is, a very prominent trochanter elevated upward and backward, above Nélaton's line.

The actual shortening, measured from the anterior superior spine to the internal malleolus, was three quarters of an inch. The apparent shortening, measured from the umbilicus, caused by the adduction of the limb was three inches and a half. The position of the foot was normal. There was no limitation of flexion, extension, or rotation of the limb; the movements were free, smooth, and painless. Abduction was absolutely restricted. That the head of the bone was in the acetabulum was shown by its normal motion and because it could not be moved up or down from its position by pressure or traction.

During the two years intervening between the first examination and the present report, the boy has been examined from time to time at his home. The appearances noted at the first examination have become gradually more marked. The actual shortening of the leg had increased an inch in April, 1893, and to an inch and a half in April, 1894; the trochanter has become more and more prominent, until the deformity is as seen in the photograph presented (Fig. 3), which shows the adduction of the leg, the compensatory upward tilting of the pelvis, and the lateral curvature of the spine.

The patient has worked steadily at his occupation of driver of a peddler's cart; he insists that he has never suffered the slightest pain or discomfort, that his ability to walk and run is equal to that of other boys. His relatives and friends have been carefully questioned, but no variation from the history has been obtained. He was in perfect condition until the age of fourteen years. The limp and shortening began without apparent cause and have increased without symptoms. All treatment has been refused. He denies overwork or injury at any time, and there is no evidence of former or present rhachitis.

Case II.—The patient, a well-nourished boy of sixteen years, came to the hospital in July, 1893. Except for a somewhat exaggerated eversion of the feet and evident flat feet, there was nothing peculiar in his appearance.

In infancy he was said to have had weak ankles, and the flat feet were of indefinite duration, but had never caused pain or discomfort. For about two years he had been working as a grocer's boy, standing and carrying heavy weights. The previous spring he had been troubled with a peculiar soreness and stiffness about the right hip, thought to be growing pain. These symptoms were entirely relieved by a journey to Canada on a canal boat. On his return his usual work was resumed, and soon after the discomfort became again apparent, and had slowly increased during the winter; recently similar symptoms had appeared on the opposite side.

The symptoms complained of at this time were a feeling of fatigue and of pain referred to the right trochanter and to the front of the thigh; a peculiar stiffness about the hip after sitting or remaining long in one position. The symptoms were increased by extra work, diminished by rest; there was at no time pain when at rest.

On examination, the eversion and flatness of the feet were very apparent, there was slight knock-knee, slight hyperextension at the knees. The trochanters appeared slightly elevated above Nélaton's line (Fig. 4) and somewhat forward of their ordinary position. The gait was somewhat rolling in character; the motion at the hip joints was perfectly free in flexion and extension, abduction limited to about a third of normal, rotation inward limited with the feet in the perpendicular line. The restriction was somewhat greater on the right side than on the left, and there was slight atrophy of the muscles of the thigh. The diagnosis of bending of the femoral necks was made; rest, gymnastic exercises, and tonics were advised.

No particular notice appears to have been taken of the diagnosis or advice, for three months later he again appeared at the hospital, at this time able to walk only with much effort, the body swaying from side to side in a very marked and peculiar manner. A number of physicians had been consulted in the meantime, diagnoses varying from hip disease to paralysis having been obtained.

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* Zur Casuistik der Verbiegungen des Schenkelhalses von Julius Schultz. *Zeitschrift für orthop. Chir.*, Bd. i, S. 55.

On standing, the prominent trochanters were seen to be markedly elevated above Nélaton's line (Fig. 5), and nearer the median line of the body—that is, although the patient stood with the feet greatly everted, the trochanters were in the position that they should have assumed with the feet inverted. Behind each trochanter there was a deep sulcus; the normal lumbar lordosis was absent; abduction of the legs now limited at the line of the body; flexion of the legs only possible when they were crossed (Fig. 6)—that is, flexion increased the adduction.

Extension of the limbs free; flexion somewhat limited on the right side; no pain or spasm or interference with motion within these limits. Crutches were now ordered.

The patient was again seen at his home four months later, and a final examination was made on May 1, 1894. The adduction had increased so that the patient swung himself along on crutches, the left leg crossed over the opposite. It was only with the greatest effort that the legs could be passed by one another, so that he usually hitched along with one leg behind the other—the so-called scissors walk.* One very noticeable change has taken place: the progress upward of the trochanter on the left side is no longer forward but upward and backward; the pelvis is thus slightly twisted, and, as the weight falls somewhat behind its normal axis, the lumbar lordosis, absent at the first examination, is now well marked. There is a compensatory upward tilting of the pelvis on the left side.

When lying on the back the eversion of the right leg is so great that the outer border of the foot rests on the table. Inward rotation is possible to 45° only. On flexing the right thigh, the leg crosses that of the opposite side, and with the thigh at a right angle with the body the outward rotation is so great that the heel is in the line of the opposite anterior superior spine. The outward rotation is less on the opposite side, but the adduction is about the same—that is, about 15°. With the limbs parallel and extended, separation of the knees to three inches and a half only is possible. Flexion at once crosses them, which explains the peculiar walk. The trochanters are at least an inch and a half above Nélaton's line.

As the patient stands, the broadening of the pelvis and shortening of the legs relative to the body is evident (Figs. 7 and 8). He is in perfect health and has no pain; although he has grown very rapidly during the year, the legs measured from the anterior superior spines to the internal malleoli are apparently of the same length as at the first examination, the increase in growth being compensated by the upward displacement.

It is believed that the bending of the necks has nearly reached the limit, and it is proposed during the summer to divide the femora below the trochanters so that sufficient abduction may be acquired to make walking possible. The photographs show the condition very well.

Case III.—An overgrown German boy, seventeen years of age, applied at the Vanderbilt Clinic on March 1, 1894. He had for a year been working as a baker; the hours were long, and he was obliged to stand constantly. Within the year he had noticed a bending of the right knee and a peculiar stiffness and pain about the left hip and thigh, most marked on changing from a position of rest to activity, as on rising in the morning or after sitting. Examination showed well-marked knock-knee on the right side (Fig. 9), and at the opposite hip joint restriction of abduction and slight restriction of inward rotation of the leg; slight elevation of the trochanter and approximation toward the median line. The limb was three quarters of an inch longer than its fellow, as measured from the apices of the trochanters to the soles of the feet, so that no actual shortening was apparent. The treatment consisted in absolute cessation of work, regular gymnastic exercises, massage, and stretching of the affected hip and knee. All the pain immediately ceased.

Case IV.—A healthy, well-nourished Italian boy, aged eleven years, came to the hospital on March 20, 1894, saying that he had been sent by his Sunday-school teacher because he limped. This limp was of possibly one year's duration; there was also at times a feeling of stiffness and discomfort about the hip and front of the thigh after long standing and running at his occupation, that of newsboy; no pain when at rest. Examination showed slight limp, slight downward compensatory tilting of the pelvis, elevation of the trochanter to an inch above Nélaton's line, and prominence most marked on flexing the limb. (Fig. 10.) One inch shortening; no adduction; no pain on motion or spasm; slight limitation of inward rotation and of abduction. The symptoms and appearances simulated exactly those of fracture of the neck of the femur with upward displacement. As the boy and his mother, whom I afterward saw, thought the symptoms—that is, the limp and discomfort on exertion—were becoming more marked, it was decided to apply a traction hip splint to temporarily relieve the weakened bone from strain and pressure. This, combined with massage and exercises, relieved the symptoms at once.

As photographs are presented of all the cases a more detailed description is perhaps unnecessary, nor have the various measurements been given, as it is thought that such details are of more importance in arriving at the diagnosis than of interest to the readers of the communication.

There is certainly a marked difference in the cases: Cases II and III show evidence of the weakness of adolescence in deformity of other joints and present also an exciting cause in the occupation.

In the first case no other joint is affected nor is there evidence of general weakness or exciting cause; although the deformity is greater than in the three other cases, the patient denies pain or discomfort.

From the clinical symptoms it would appear that the progress of the bending of the neck of the femur is comparatively rapid until the resistance of the compressed bone is sufficient to oppose further increase of the deformity, or until the head of the bone rests upon the trochanter minor, as in Hoffa's specimen.

Apparently the head of the bone is usually depressed downward and backward in the line of the least resistance; the femur is thus rotated outward, which explains the eversion of the feet; the trochanter elevated and pushed nearer to the median line of the body. Its prominence is explained by the elevation and by the change in the angle of the neck.

The limitation of abduction of the limb is explained by the pressure of the neck upon the upper border of the acetabulum, of the trochanter on its upper and posterior rim, and by the pressure of the lower border of the depressed head upon the lower portion of the capsule (Fig. 11). In other words, with the legs in apposition, the deformed neck is in the relation to the acetabulum that is normal in extreme abduction of the limbs. Flexion of the limb increases the deformity, as may be explained by the shape and position of the acetabulum; its upper and posterior margin being more prominent, it interferes with the prominent trochanter, so that adduction is increased and the tissues are markedly distended by the projecting bone; thus the assumption of the sitting posture is often painful, or rather the change from the erect to the sitting posture. This symptom was complained of in the cases of fracture of the neck of the femur in young children which I have reported,* in whom the deformity and clinical appearances were very similar to a slight degree of this deformity. If the deformity is of one side only, the symptoms are simply stiffness and limp from the shortening, increased by the adduction of the limb, which causes the compensatory upward tilting of the pelvis. If on both sides, the adduction of the limbs causes the peculiar rolling gait because of the interference of the knees. The deformity of one side may cause merely an awkwardness and limp, but on both sides it may disable the patient.

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* Petit. Les jambes en ciseaux. *Cong. français des chir.*, 1892, p. 733.

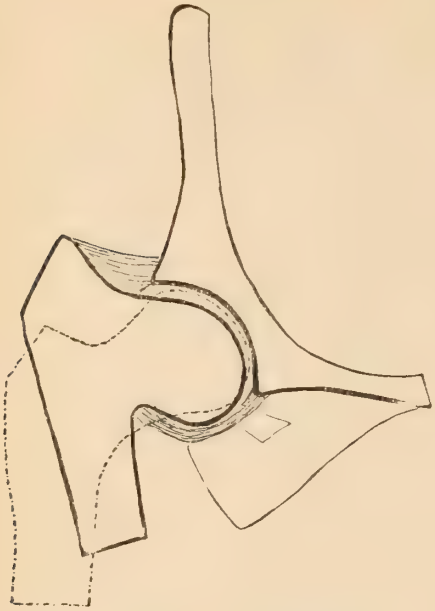

FIG. 11.—Cross section of the pelvis and the deformed femur. A scheme to show the effect of the deformity in limiting abduction of the limb. The dotted outline shows the normal relation.

The character of the pain is similar to that noticed in developing knock-knee and bowlegs of adolescence. The awkwardness and weakness are sufficiently explained by the changed relations of the joint surfaces and of the muscles and ligaments attached to the femur. If the leg is greatly adducted as the result of the depression of the neck of the femur, the conditions are favorable to a gradual upward enlargement of the acetabulum, and it is possible that the final result in as extreme a case as No. 1 may be a partial dislocation from the acetabulum.

Although Müller was the first to call attention to the clinical significance of this affection the deformity itself has been described by several others. Röser in 1843 † described a specimen obtained from a subject who died at the age of twenty-four years. During life the limb had been so adducted and flexed as the result of inflammatory disease in the neighborhood of the joint that it had never been used, and was supposed to be a deformity caused by spontaneous dislocation from hip disease. Section showed the joint surfaces normal and the head of the bone in the acetabulum, the neck being greatly distorted downward and forward.

Zeis, in 1851,* described a museum specimen of distortion of the neck of the femur downward and forward, and in this case also section showed no disease.

A very perfect illustration of downward distortion of the neck of the femur to forty-five degrees may be seen in the *Transactions of the Philadelphia Pathological Society* for 1857,† obtained from a subject in a dissecting room. Before removal the deformity was supposed to be the result of fracture. Section showed no evidence of previous injury or disease. The opposite femur was deformed in a similar manner though to a less degree.

Another familiar example of change in the angle and position of the neck of the femur is that of congenital dislocation.

In each of the five instances in which I have had an opportunity to examine the neck of the bone during the operation for its replacement after the method of Hoffa it was depressed to a right angle with the shaft, and in one case markedly displaced forward.

Specimens show depression of the neck as the result of fracture and of local disease, as in osteomyelitis, ‡ osteitis, or necrosis, and one case of very great deformity of both femoral necks somewhat resembling in clinical history Case II was described and illustrated by Monks,# of Boston, in 1886. Although the patient, a boy of eighteen years, suffered from knock-knee and flat feet in addition to deformity at the hip joint, it did not occur to the author, nor to the gentlemen who discussed the case, to include the deformities under one general cause. Dr. Monks was obliged to make the evidently unsatisfactory diagnosis of arthritis deformans to explain the peculiar deformity at the hip. A case somewhat similar in history and appearance to that of depression of the neck of the femur has been reported and illustrated by C. B. Keetley, ‖ of London, to whom I am indebted for the original manuscript and photographs of the case. The patient, a girl of twenty, was admitted to the West End Hospital in March, 1888, for a limp and marked prominence about the right trochanter. The duration of the deformity was about eight years; she had been treated at various hospitals from time to time under diagnoses of dislocation, periostitis, tumor, and the like.

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* Fracture of the Neck of the Femur in Childhood. *Medical Record*, February 25, 1893.

† Schmidt's *Jahrbücher*, 5. Supplementband. Leipsic, 1843, p. 257.

* *Beiträge zur pathologischen Anatomie und zur Pathologie des Hüftgelenks*, No. 1.

† Richardson. Deformity of the Neck of the Thigh Bone simulating Fracture with Ossific Union.

‡ Oberst. Ueber Knochenverbiegungen bei akuter Osteomyelitis. *Münch. med. Woch.*, 1890, v, 13.

G. H. Monks. A Case of Unusual Deformity of both Hip Joints. *Bost. Med. and Surg. Jour.*, Nov. 18, 1886.

‖ Keetley. A Case of Rhachitis Adolescentium, etc. *Ill. Med. News*, London, vol. i, No. 7.

Keetley regarded the case as unique and called Sir James Paget in consultation, who did not make a diagnosis but advised observation.

Later, Keetley made a diagnosis of local rhachitic disease with bending of the femur in the trochanteric region, because of the slow progress of the disease and the development of a rotary curvature of the spine. As the disability was caused principally by adduction of the limb Keetley removed a cuneiform section of the bone below the trochanter and by division of the adductors brought the limb into good position with subsequent great improvement in the posture and gait. The subsequent history is not given. The wedge of bone removed at the operation showed evidence of local rhachitis.

Bending of the neck of the femur may be one of the deformities of osteomalacia, osteitis deformans, and finally, as the result of the very much more common disease, rhachitis.

Lauenstein [*] obtained specimens of downward bending of both femoral necks from a child of six years, who died shortly after the rectification by osteotomy of other rhachitic deformities of the lower extremity. This peculiarity had not been suspected during life. He afterward examined several adult skeletons deformed by rickets and in one found very great distortion of the femoral necks, the trochanters being in such close proximity to the rim of the acetabulum that slight motion only could have been possible during life.

Nélaton [†] called attention to the occasional elevation of the trochanters in rhachitic children. I have examined a large number of rhachitic children with reference to this point.

The elevation of the trochanters, when present, is usually either apparent, due to the abduction of the limbs, as in bowlegs, or in other instances seems to be caused rather by an outward bending of the upper part of the shaft than by change in the angle of the neck. In one case, a child of two years, suffering from a mild degree of rhachitis, elevation from bending of the necks appeared to be present, and there was in addition the characteristic limitation of abduction of the thighs, a symptom absent in the other children examined. The legs were nearly straight; the principal symptom, according to the mother, was the difficulty experienced by the child in getting on its feet from the sitting posture.

It is evident, however, that this deformity in early childhood is a rare one compared with the other deformities of rhachitis, probably because the neck of the femur is so short and comparatively large that bending to the extent of producing noticeable and characteristic symptoms is hardly possible.

The question of ætiology of the deformity is naturally of importance in its influence on the treatment to be pursued. Müller thought that a local form of late rickets would best explain the weakness of the bone, and this view is supported by Lauenstein.

The term "late rickets" is a misleading one, because it is applied by Clutton,[*] Drewitt,[†] and others to a general disease identical with infantile rickets that may appear in later life, as shown by cases and specimens obtained.

Local rhachitis, in the sense used by Müller and others, has none of the characteristics of ordinary rhachitis, either in symptoms or in the appearance of the specimens.

Mikulicz, it is true, supported the theory of local rhachitis as the cause of similar deformities at the knee joint by the broadening of the epiphyseal cartilage, a condition which Trippier asserts is normal at a period of rapid growth.

As there is at present no direct evidence of local rhachitis, it may be well to call attention to other possible predisposing causes for this deformity; for example, relative slenderness and weakness of the bones, to which attention has been called by Mikulicz,[‡] Arndt,[#] and Humphrey; [‖] to the variation in the angle of the neck of the femur between 110° and 140° in the specimens examined by Humphrey and Mikulicz; [△] also in its direction. Usually it projects forward from the shaft at an angle of 12°, but in certain specimens this was increased to 20°, and in one it projected backward at an angle of 25° with the shaft.

Some of these peculiarities I have noticed in the dissecting room of the College of Physicians and Surgeons, especially the variation in the size and apparent strength of the neck in bodies of corresponding size.

Humphrey [◊] asserts that there is not, as is usually supposed, a gradual sinking of the neck from childhood to old age, but that the descent is terminated in adolescence. This statement is supported by the observations of Lane.[‡] If it is true that a certain amount of depression of the femoral neck is normal during adolescence, it seems reasonable that this may become exaggerated to deformity in individuals presenting possibly peculiarities in the shape, size, or position of the bone, or in those subjected to some of the other predisposing causes which have been mentioned. It is possible also that injury, as suggested by Müller, or sudden overexertion, as in a case reported by Mosetig, may in certain instances serve as the exciting cause of the deformity. Although rhachitis is responsible for most of the extreme deformities of childhood, yet it is a matter of common knowledge that bowleg is not at all uncommon in children who do not show a trace of disease —who are, in fact, exceptionally active, standing and walking at an early age—the bending of the bone being in such cases the effect of over-weight.

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[*] C. Lauenstein. Bemerkungen zu dem Neigungswinkel des Schenkelhalses. *Archiv für klin. Chir.*, Bd. xl, S. 244.

[†] Art. Rachitisme. *Nouv. dict. de med. et de chir.*, vol. xxx, p. 382.

[*] Clutton. Late Rickets. *St. Thomas's Hospital Reports*, 1884, p. 105.

[†] Drewitt. A Case of Late Rickets. *Trans. Lond. Path. Society*, vol. xxxii, p. 387, 1881.

[‡] Mikulicz. Die seitlichen Verkrümmungen am Knie, etc. *Archiv für klin. Chir.*, Bd. xxiii, S. 561.

[#] Arndt. Pes Valgus, Pes Varus, und das biologische Grundgesetz. *Wiener med. Presse*, April 6, 1890.

[‖] Humphrey. The Angle of the Neck with the Shaft of the Femur at Different Periods of Life and under Different Circumstances. *Journal of Anat. and Phys.*, vol. xxiii, 1889, p. 236.

[△] Mikulicz. Ueber individuelle Formdifferenzen am Femur. *Archiv für Anat. und Phys.*, Anat. Abth., 1878, S. 364.

[◊] *Loc. cit.*

[‡] Arbuthnot Lane. Senile Changes in the Human Subject. *Trans. Lond. Path. Society*, 1886, p. 446.

It is, however, not the object of this paper to deny the possibility of rhachitis as the cause of this affection, but rather to place this particular deformity in the same class with the knock-knee and bowleg of adolescence.

The treatment, aside from that of the general condition, will be: 1. To remove the exciting cause—that is, overwork. It may be in some cases that simple cessation of the occupation will be sufficient; in others, and particularly the one-sided deformity, the long traction hip splint, if the patient will permit, would seem to be indicated.

2. Local massage, exercises, and manipulation and passive motion in the direction of the restricted motion, on the principle of manipulation in the treatment of similar deformities of the knee and foot.

3. In the advanced cases osteotomy below the trochanter, on the principle followed in deformities at the knee, because the disability is caused by the adduction of the legs more than by actual shortening. By osteotomy, with consolidation, with the legs widely separated, one may, to a certain extent, replace the head of the bone in a relatively proper position and relieve the extreme outward rotation. The diagnosis of the affection does not offer any particular difficulties at the stage in which patients usually present themselves.

Marked prominence and elevations of the trochanter above Nélaton's line can be caused only by these conditions:

1. Displacement of the head of the bone from the acetabulum.

2. Change in the angle of the neck of the femur.

3. By upward enlargement or "wandering" of the acetabulum.

Dislocation may be congenital, in which case the patient limps from the moment that he begins to walk. It may be the result of traumatism, in which case the deformity and disability are instantaneous.

It may be the result of sudden distention and rupture of the capsule by serous effusion, as in rheumatism; or by pus, as in acute arthritis or hip disease.

All these conditions may be excluded by the history.

In the absence of any history, the differential diagnosis between dislocation and bending of the neck of the femur is easily made.

In all cases of dislocation of the femur upward, if the thigh is flexed and adducted to its extreme limit, the neck of the displaced bone can be traced upward and the head of the femur made out, moving beneath the distended soft parts when the thigh is rotated. In bending of the neck of the femur nothing but the prominent trochanter can be felt. In all cases of congenital dislocation a certain amount of upward and downward motion may be obtained by pressure and traction of the limb; in bending of the neck this is impossible.

The neck of the bone may be depressed as the result of fracture, in which case there is a history of injury. It may be distorted by local disease—as osteomyelitis, osteitis, or necrosis—when there must be the evident signs of local disease, such as pain, swelling, suppuration, and constitutional depression. It may be depressed as one of the deformities of a general disease, such as osteitis deformans, osteomalacia, or general rhachitis. It is then but one of a series of deformities, and does not call for special comment.

Wandering of the acetabulum has only been observed after long-continued deformity and spasm of muscles, the result of confirmed hip disease, and the condition may therefore be excluded on the same grounds. It is evident that the only difficulty in diagnosis must arise at a very early stage of the affection from mild forms of rheumatism or hip disease. It is probable, however, that the progress of the deformity is coincident with the symptoms, thus differing from rheumatism, in which there is no elevation of the trochanter; and hip disease, in which elevation of the trochanter is a late symptom, occurring long after the diagnosis has been made.

In bending of the neck of the femur there is no local swelling or infiltration; the limitation of motion is in abduction and inward rotation; other motions are at this stage unlimited. In hip disease or rheumatism, when limitation occurs, it is in all directions, and accompanied by muscular spasm, which is absent in this affection.

The character of the symptoms, discomfort, stiffness, and pain about the trochanter and front of the thigh, increased by work and absent when at rest, is very different from the neuralgic pain of hip disease, while chronic rheumatism in a young person, confined to one joint, must be a very rare affection.

Prognosis.—Unchecked, the deformity shows a marked tendency to increase, as illustrated by Cases I and II. Judging from Müller's three cases, the pain, disability, and limitation slowly increase for a time; then the pain ceases, and the disability caused by shortening and restriction of motion remains, but does not prevent the patient from following his ordinary pursuits.

Doubtless early diagnosis and treatment will, in patients willing or able to follow advice, prevent the further increase of the deformity. Osteotomy, I am sure, will remove the more serious disability, although it can not be as effective as in the other deformities of the lower extremity.

The Treatment of Hiccough with Snuff.—In the *Journal des praticiens* for May 5th (*Lyon médical* for May 20th) M. Tatevossow relates a case in which he successfully combated diaphragmatic spasm accompanied by cough or prolonged paroxysms by making the patient take snuff until sneezing set in. Its action was immediate, the paroxysm ceased, and the continued use of the snuff caused the disease to disappear. This, it is remarked, is an extenuating circumstance in favor of snuff that the societies against the abuse of tobacco might take into account in their proceedings.

An Effervescent Purgative Lemonade.—The *Journal des praticiens* for May 30th publishes the following formula, by Dr. Constantin Paul, who recommends it on account of its rapid action (in two or three hours) and its being tolerated: Sodium phosphate, three hundred and seventy-five grains; distilled water, eight ounces; syrup, an ounce; tincture of lemon, twenty-five drops; citric acid and sodium bicarbonate, each, half a drachm.

TWO CASES OF MALIGNANT DISEASE:
AN OSTEOSARCOMA
INVOLVING AN ANTERIOR CRANIAL FOSSA,
AND AN EPITHELIOMA OF THE LARYNX.*

By CHARLES PHELPS, M. D.,
SURGEON TO BELLEVUE AND ST. VINCENT'S HOSPITALS.

In December last I presented to this society an intraperitoneal sarcoma which was of more than usual interest in its origin and development. The operation was immediately successful, and I have not at the present time been advised of its recurrence. I propose now to submit two other cases of malignant disease which, though differing from the first and from each other in type, have a character in common, in virtue of which they may be considered closely enough connected to form at least a harlequin series.

A Case of Osteosarcoma involving an Anterior Cranial Fossa.—The patient, sixty-five years of age, was admitted to Bellevue Hospital in June, 1892, for relief of a pain in the left eye and frontal region. Ten months previously she had been knocked down, and, her forehead striking the floor, a persistent swelling over the left eye ensued, which gradually hardened, increased in size, and became moderately painful. In time it was followed by protrusion of the eye and lacrymation. Her general health was good and her previous history unimportant.

At the time of admission the eye was markedly protruded, but there was no evident change in its structure; sight was unimpaired. Ophthalmic examination disclosed slight optic neuritis. The osseous tumor was situated just above the external portion of the supra-orbital ridge; it was hard, painful on pressure, circular in form, about an inch and a half in diameter, and elevated above the surrounding surface about a half to three quarters of an inch at its highest point in the center. The skin which covered it was uninvolved. Its growth was very perceptible during the week's time in which it remained under observation.

In operation a semicircular incision was made from a point over the junction of the inner and middle thirds of the supra-orbital ridge to the temporal fossa, and the underlying portion of the frontal bone exposed. This flap, with the eye and appendages, which were partially detached from the orbit, was turned over upon the cheek. The external table of the bone covering the tumor was thickened, softened, and eroded, and its margin well defined. A canal was then cut through the adjacent healthy bone, which was of unusual thickness—at least half an inch by actual measurement. A small trephine, Hay's saw, and *rongeur* were employed for the purpose. The orbital ridge internally and the malar process and zygoma externally were sawn through and the superior wall of the orbit exposed and cut. An attempt was made to lift out the mass by means of a curved periosteal elevator, which was successful only in removing its superficial portion; the remainder was subsequently excavated by the same instrument.

The operation, which presented no special difficulties, was completed in a little more than an hour's time. There was no loss of blood except a small amount from the tumor itself at one point at an early stage of the procedure, and which was readily controlled by a temporary compress of gauze applied beneath the margin of the osseous incision. No stimulant was required and the patient did not suffer from subsequent shock.

The cavity which remained showed a loss of almost the entire upper and inner walls and a portion of the outer wall of the orbit, including the lacrymal bone and portions of the frontal sphenoid and ethmoid bones which had been incorporated in the process of growth. The tumor, apparently beginning in the diploe of the ascending frontal bone, had destroyed a great part of the external and all the inner table in the region where it had first appeared above the eye. It had then extended quite to the median line behind the orbit and beneath the frontal lobe of the brain. The dura mater was not involved and was uninjured in the course of operation. The whole left frontal lobe was exposed anteriorly and inferiorly, and could be seen to be compressed and pushed backward almost to the petrous portion.

The tumor was of irregular form, and from two to three inches in its longest diameter. It was largely composed of bone in lamellæ and tuberculæ, which were in great part eburnated. It was friable, but little vascular, and in its soft parts of cheesy appearance. A subsequent microscopic examination by Dr. J. W. S. Gouley showed it to be spindle-celled, with a small proportion of round cells intermixed. The adjacent muscular and connective tissue were infiltrated with the round cells. At the first dressing of the wound on the second day there was copious hæmorrhage, which seemed to be capillary and was readily controlled. Vision and ocular movements were both undisturbed, and there had been no elevation of temperature. At the end of ten days she became delirious, with lucid intervals, and complained of headache and photophobia. About this time she had two attacks of severe vomiting, followed by unconsciousness and apparent collapse. The condition of the wound, however, continued to be satisfactory, and the temperature at no time exceeded 100° F. Ten days later still the wound was almost entirely healed, and a plate of new bone covered in the cavity left after operation. Active delirium had ceased, but her mind was still unbalanced. She had some delusions, talked much to herself, was childish in her manner, and still complained of headache. At the end of a month there were no symptoms, either general or local. She was discharged from the hospital three months after the operation. The movements of the eye were unimpaired, and its structure and function were normal. There was no evidence of a recurrence of the disease. A thick, firm plate of new bone replaced the osseous structures removed. This presented a plane surface, as no effort had been made to preserve the frontal convexity, but no considerable deformity resulted.

Nothing occurred to attract the patient's attention to herself till December (six months), when she noticed a slight bulging of the eye, which was somewhat sensitive to the touch, and she began to suffer pain in the median line of the forehead. A little later she discovered a slight and very hard supra-orbital swelling, which, in six weeks' time, extended to the outer angle of the eye and over the malar bone. In March the swelling became less well defined and reached the temporo-parietal region. Vision was unaffected. She was readmitted to the hospital in April, 1893. At this time her general health had become seriously impaired. The frontal bone, at the inner margin of the former incision, was thickened and nodular. The tumor in the temporal region had increased and had softened so much as to give the impression of a cyst. The eye protruded, the conjunctiva was somewhat inflamed, and vision was a little clouded. She was feeble and anæmic, but her condition sufficiently improved in the course of a week to justify the attempt to again extirpate the tumor. Incision was made to circumscribe the cicatrix of former operation, beginning at the inner angle of the eye, carried well up toward the coronal suture, and terminated over the zygoma. The flap was dissected downward through the orbit, and with the eye, which was held only by the optic nerve and vessels, turned over upon the face, as in the original procedure. The frontal plate of new bone was cut, and the supra-orbital ridge at its inner extremity and the zygoma externally sawn through. The tumor was then removed in fragments by the bone forceps and the fingers. The dura was involved on the inferior cerebral surface, and at one point was torn away, exposing the brain tissue. The frontal lobe was less compressed than at the time of previous operation, and occupied about half of the anterior fossa. The portion of old frontal and ethmoid bone which had become implicated in the renewed progress of the disease was cut away. The new osseous growth, which had replaced the ascending frontal and orbital plate previously resected, was included in the mass removed. The present growth, unlike the original—which was dry, white, and cheesy, with osseous lamellæ—was composed of delicate bony reticulæ, filled with soft and vascular tissue. Hæmorrhage was moderate, there was no shock, and strength was quite maintained by stimulants hypodermically administered during the operation. On the second day the conjunctiva and lids were somewhat œdematous, but vision was unimpaired. The optic nerve and retina, upon examination, were found to be much congested. On the fifth day some dysphagia and some rigidity of the right arm, which increased and then diminished, were noticed. Six hours later there was a slight convulsive movement of the whole left side of the body, and at about the same time a slight right facial paralysis was evident. Incontinence of urine and fæces followed. The left eye, which had become more protuberant, began to pulsate, and the cavity of the wound was found to be filled with brain substance. On the sixth day there were slight convulsive movements of the left side, with the general condition unchanged. On the seventh day the temperature increased (to 104·6°), the pulse became rapid, and respiration irregular and shallow. She died six days and seven hours after operation, having been unconscious for sixty hours.

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* Read before the Society of Alumni of Bellevue Hospital, April 4, 1894.

Necropsy was denied. The wound was reopened, however, and the cavity left by removal of the tumor was found to be filled with diffluent brain matter, into which numerous minute hæmorrhages had occurred. No foreign growth could be discovered in any part of the brain or cranial cavity which could be reached.

I have detailed this case with some minuteness because it seems to me of more than ordinary importance. The development of the tumor as a result of traumatism, its situation which came to be largely within the cranial cavity, the facility with which it was removed, and the apparent interval which elapsed before its recurrence, are alike worthy of note. The occasional origin of this form of malignant growth in traumatism is clearly illustrated, and the comparatively long period during which it seemed to be latent, although the adjacent tissues were infiltrated with small cells, is calculated to afford some confidence in operation even after the disease has made considerable progress.

Though the growth had its beginning in the diploe of the frontal bone, and was consequently originally extracranial, it was essentially intracranial at the time of operation and came within the province of that department of surgery. The method of procedure adopted demonstrates an easy means of access to the anterior portion of the cranial cavity for its complete exposure. The preservation the eye and its appendages with entire integrity of function, and the reproduction of the frontal bone removed, obviate possible objections to its use.

The continued freedom of the brain from implication seems remarkable. For at least ten, and probably the greater part of twenty, months the dura had resisted the extension of the morbid process inward, though bone and connective tissue yielded. At the secondary operation the dura was found to be incorporated in the tumor over a very limited space, not larger than a finger nail. This was not from any inherent power of resistance, since in Hale White's collation of brain tumors sarcomata were more numerous than any others, save those of tubercular character, and some were of dural origin. Death finally resulted directly from brain lesion, but the sarcomatous growth was only concerned in so far as it induced fatal nutritive disorders.

Time only permits this very casual mention of matters which might properly deserve more careful consideration.

A Case of Epithelioma of the Larynx.—A gentleman of distinction in the medical profession, during a paroxysm of coughing three years ago, felt a rupture occur in the larynx and was aphonic from that moment until his death, though he suffered no other local inconvenience, and his general health until very recently remained unimpaired. In October, 1892, at my suggestion he consulted a specialist in diseases of the throat, who discovered a growth upon the left vocal cord which was of warty appearance and covered nearly its whole extent. He was assured that its character was benign and need cause him no uneasiness, but that he might return for further examination after some months.

In December last I visited him at his request. He had then been confined to his house since the first of the month, and thought he was suffering from the then prevailing epidemic of influenza. He was physically weak, mentally indisposed to exertion, and had some laryngeal cough. I subsequently learned that for some months he had subsisted mainly upon fluid food on account of a difficulty in deglutition, and had failed in nutrition. I attributed his condition to progress of the laryngeal tumor, and again suggested examination by a laryngologist. He was seen by Dr. C. C. Rice, who confirmed my suspicion that the disease was malignant, and coincided in my opinion that early tracheotomy should be done. In the early morning of December 31st the trachea was opened, partly on account of increasing dyspnœa, but more hastily by reason of the unfavorable character of the pulse. He derived immediate advantage from this preliminary operation, which was soon lost by the considerable formation and extrusion through the tube of masses of tracheal granulation tissue. These contained aggregations of small spindle cells which were regarded as suspicious. On the 8th of February the larynx and trachea were opened externally in the median line from the thyreoid notch to the tracheal opening previously made. The tumor, which nearly filled the larynx, was cut away by scissors and its site curetted and afterward cauterized with chromic acid. The tracheal granulations were removed in the same manner. This operation, like the previous tracheotomy, was done with the use of cocaine and presented no difficulties, except in the control of some troublesome hæmorrhage from a small vessel at the posterior commissure of the vocal cords, which was finally effected by the fortuitous application of clamps which were left *in situ* overnight. I was assisted by Dr. Gouley, Dr. Rice, Dr. Wiggin, and Dr. D. H. Cooke, to whom I beg to acknowledge my indebtedness. He suffered little from reactive effects of the operation. At the end of the first week there was very temporary tenderness of the thyreoid cartilage, painful deglutition, and discharge from the mouth of mucus tinged with blood. This condition, after an interval of comparative comfort, was followed by profuse muco-purulent discharge from the tube, renewed formation of granulation tissue, and gradual occlusion of the trachea. He was freely nourished, moved about his apartment, and maintained a resolute and cheerful condition of mind. At the end of the second week his strength had visibly failed, his lungs were passively congested, his respiration was becoming less sufficient, and he was delirious at night. On the day of his death he was unusually cheerful in the morning, ate his luncheon, smoked a cigar, and only began to suffer markedly from dyspnœa in the early evening. At eight o'clock, after two hours of delirious dyspnœa, he became unconscious. His breathing was afterward easy, and his pulse fairly strong, quite regular, and not more than a hundred in the minute. He remained eight hours in this condition without appreciable change, when he died somewhat suddenly on the seventeenth day after operation.

The tumor was very carefully examined by Dr. Gouley and by Dr. E. K. Dunham, of the Carnegie Laboratory, who concurred in the opinion that it was a commencing epithelioma. The sections made showed a stroma of fibrous tissue covered with stratified epithelium and containing nests of epithelial cells, many of which included "pearl bodies." From independent observations both gentlemen reached the conclusion that the process of degeneration had not extended over more than from three to four months.

If the direct influence of traumatism manifest in the preceding case of osteosarcoma, and possible in the earlier one of intraperitoneal sarcoma, is absent in the history of this case of epithelioma, it was still exerted in the formation of the original papilloma. There seems little doubt that an injury of the vocal cord sustained during a paroxysm of coughing occasioned the benignant growth which later suffered degeneration.

The lengthened period during which this primary formation, though in continued process of growth and exposed to continued irritation, resisted its own inherent tendency to retrogression, to which it eventually succumbed, not only points the danger of the expectant, or rather drifting method of treatment, but is reassuring evidence that even in long-neglected cases a late operation, though in this instance it was unhappily a little too late, may yet chance to be in time.

It may be noted that the period during which degeneration is supposed to have begun embraces the time when the general health first distinctly failed. It is, of course, impossible to determine whether this coincidence has any significance, but it is a fact which naturally arrests attention.

The moral of these two later cases, as well as of the one which went before, seems to be the same: that safety only lies in the earliest possible removal of all tumors, whether benign or malignant. As all tumors, whatever their beginning, are liable to end in malignancy, and as the exact time when benign growths may be destined to transformation can not be predicted, so none can tell in how brief a time delay may become disastrous. If this moral seems trite to many members of this association, I beg them to remember that it is among the truths which still require reiteration, for it is still far from universal acceptance as a guide in practice.

34 West Thirty-seventh Street.

TRAUMATIC ANEURYSM
OF THE DORSAL ARTERY OF THE RIGHT FOOT.
LIGATURE OF THE VESSEL, ABOVE AND BELOW THE TUMOR, AND EXCISION OF THE SAC.*

By JOHN W. S. GOULEY, M. D.

The rare occurrence of aneurysmal tumors in the dorsal region of the foot may warrant a record of the following case, which is interesting from this circumstance and from the method of treatment employed. The old operation of opening aneurysmal sacs, as revived, improved, and advocated by John Bell and later by James Syme, suggested to the writer the idea of excising as much of the sac as possible in this case after cutting off the circulation of blood in the parts by tying the artery above and below the sac. Two cases of aneurysm previously treated also induced the writer to open and excise the sac in this particular instance:

The first was the case of a private soldier who had received a sword thrust in the upper part of the left arm, and was brought to the writer, a few hours afterward, with a tumor the size of a hen's egg at the seat of injury. The external wound was small, and the skin had evidently been momentarily displaced so that afterward it acted as a valve to the tract leading to the artery. This and the blood coagulation in the adjacent connective tissue seem to have prevented grave hæmorrhage. Pressure on the subclavian artery having been applied, a free incision was made upon the tumor, which proved to be a firm clot of blood and was removed. The artery was then exposed and a ligature was applied above and another below a small oblique wound of this artery at the junction of its brachial and axillary regions, and the wounded part of the vessel excised. Thus a traumatic aneurysm in embryo was destroyed. The patient made a good and rapid recovery.

The second was the case of a man, twenty-two years of age, suffering from constitutional syphilis, who, two years before his admission to Bellevue Hospital on the 8th of October, 1871, had received a severe contusion in the right inguinal region, in consequence of which a large aneurysm had developed rapidly in the external iliac artery, and at the time of admission was already diffuse. It was decided to tie the primitive iliac, but all of the writer's colleagues voted against the proposition to open the aneurysmal sac. This artery was tied on the twelfth day of October and the tumor was left intact. On the sixth day after the operation a part of the sac could be seen through the unhealed lower half of the wound. This part of the sac, which was gangrenous, burst open on the tenth day, giving issue to decomposed blood. The patient died of pyæmia on the nineteenth day, the ligature having been cast off. Had the sac been laid open during the operation, it is likely that the patient would have made a good recovery. The case is reported in the first volume of *Transactions of the New York State Medical Association.*

In his article on diffuse traumatic aneurysms, although John Bell expressed the soundest views respecting the progress and the management of these tumors, and although these views were advocated by other surgeons, they are not now carried into practice as often as they merit. His clear and precise language was substantially as follows: "When such an aneurysm holds, perhaps, not more than an ounce, it speedily increases until it contains ten or twelve ounces. The overlying tissues change, and the skin assumes a different hue and approaches sloughing. The sac itself becomes filled with coagula which perhaps plug the artery above and below. By this crowding and compression, sloughing occurs in the aneurysmal sac, and pyæmia is the consequence." To avoid this disastrous result he resorted to early incision of the aneurysmal sac, removal of the clots, and ligature of the artery above and below the open sac which he treated antiseptically, and sometimes at once excised. These experiences of Bell, Syme, and other eminent surgeons seem not only to justify but to demand the opening or even the excision of such aneurysmal sacs whenever they can be reached with safety. The writer's case of aneurysm of the dorsal artery of the foot is therefore reported as a small contribution to the statistics of this mode of procedure.

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* Read before the Society of Alumni of Bellevue Hospital, April 4, 1894.

C. A. P., a carpenter, was admitted to Bellevue Hospital on the 19th of September, 1873. He had been in the habit of drinking spirituous liquors to excess for thirty years, but had had no serious constitutional disease. Thirteen years before his admission to the hospital he had received a severe bruise on the right instep from a falling stick of timber, and in consequence was lame for two or three weeks, after which he paid no attention to the foot until six months before admission to Bellevue Hospital, when he began to have pain in the instep which he attributed to a tight-fitting boot, and accordingly slit the boot at a point corresponding to the seat of pain. This relieved him for a short time, but he soon noticed a slight swelling of the instep, which increased slowly until three weeks before admission, and was not very painful. From that time to the date of his admission to Bellevue the swelling had doubled in size, had assumed a hemispherical form, two inches and a half in diameter, and had extended from the tibio-tarsal to the tarso-metatarsal articulations. The tumor was tense, elastic, and faintly pulsating in synchronism with the anterior tibial artery, the compression of which caused the interruption of a distinct bellows murmur and thrill discerned only a few moments before. It was, however, suggested that the tumor might be a highly vascular sarcoma by a colleague who thrust in an exploring needle, on whose withdrawal blood spurted as from an artery. The jet ceased as soon as pressure was made with a finger upon the anterior tibial artery, and the hæmorrhage was easily arrested by the application of a compress at the seat of puncture. This flow of blood so reduced the tenseness of the tumor that, when the artery was released from pressure, the pulsations became more distinct, and there was then no doubt of its aneurysmal nature. The skin on the outer aspect of the tumor was livid and tender. This and the sudden increase in its volume led to the belief that the aneurysm was already diffuse. It was therefore decided to tie the anterior tibial artery, to lay open the tumor, and to excise the greater part of its sac. On the third day of October the tibial artery was tied an inch and a half above the tumor, and another ligature was applied to the distal end of the dorsal artery of the foot. A free longitudinal incision was then made through the sac, clots of blood were removed from its cavity, and the major part of this sac was dissected away, leaving only such portions thereof as were firmly adherent to the extensor tendons and to the tarsus. The wound was packed with lint saturated with a two-per-cent. solution of carbolic acid in glycerin, and a fenestrated gypsum splint applied to the leg and foot. The dressings were not disturbed until the fourth day, when suppuration was free, and parts of the sac which remained were sloughy and becoming loose. After this the wound was dressed daily.

On the seventh day a part of the extensor tendon of the great toe was found exposed and in a sloughy state, but the rest of the wound, except small portions of the sac, was covered with florid granulations. On the tenth day the remaining bits of the aneurysmal sac had been cast away, but the sloughy part of the long tendon was still held in position and was not removed until the next day. The distal ligature was cast off on the thirteenth day and the tibial on the twenty-third day. Owing to suppuration in the sheath of the long extensor tendon, an incision was made at the base of the great toe on the thirtieth day. From that time onward the process of cicatrization was uninterrupted. The wound was entirely healed, and all dressings were removed on the forty-second day. The patient remained under observation thirty days longer. He was then able to walk well, and left the hospital in good physical condition.

It seems more than likely that in this case, if the operation had been delayed even a few days, the consequences of greater diffusion of the aneurysm would have been disastrous to the patient's foot if not to his life. This and other experiences surely point to the great importance of early radical surgical interference in diffuse aneurysms. Traumatic aneurysms of the dorsal artery of the foot were probably of frequent occurrence when venesection was as commonly performed in the foot as at the bend of the elbow by barber surgeons and itinerant charlatans in market-places, but are now rarely seen, and the traumatism is ordinarily of a different nature. Idiopathic aneurysms of this little artery are of such extreme rarity that many surgeons of extensive experience have never seen one. In 1874 the late Dr. S. D. Gross reported the first and only case he had ever observed of idiopathic aneurysm of a small artery of the dorsum of the foot, and this is the only case which has come to the writer's knowledge.

The laying open of aneurysmal sacs seems to have been recommended and practiced from the beginning of the last century. In the excellent bibliography appended to Erichsen's *Observations on Aneurysm*, 1844, the following instances are cited:

"In 1702, Saviard recorded a case of aneurysm at the bend of the arm caused by rupture of the brachial artery from a violent exertion. He laid the tumor open and then applied a ligature above and another below the opening in the artery." The same author gives "the history of a case of aneurysm occurring after bloodletting; in this he insists particularly upon the necessity of applying a ligature below as well as above the opening in the vessel."

"In 1712, Preuss reported a case of popliteal aneurysm, which being punctured and dressed with balsamic and styptic liquids, at length suppurated and was cured."

"In 1712, Klaunig, . . . an aneurysm of the external carotid from a sword wound, . . . when it burst, alum, lint, and styptics were crammed into the sac; erysipelas of the face then came on, and the sac suppurating, the patient was cured."

"In 1716, Dionis . . . confines his observations to aneurysms at the bend of the arm, gives an account of their treatment by compression, and describes the operation of opening the sac; in which case he says that the hæmorrhage may be arrested in three ways: by compressing the ends of the vessel by means of paper pulp soaked in some styptic liquid, by a button of vitriol, or by ligature."

"In 1723, Garengeot . . . recommends compression and the ligature of the vessel above and below the tumor, which is then to be opened. . . ."

"In 1734, Teichmeyer and Emrich. . . . The aneurysm which occurred at the bend of the arm in consequence of a puncture of the brachial artery during bleeding was cured by being laid freely open."

"In 1769, Trew, . . . The aneurysmal tumor having been laid open, balls of paper pulp, soaked in spirits of wine, were tightly applied to the orifice of the artery . . . the patient was cured."

Doubtless many such other cases have been similarly treated.

The bold and successful treatment of an axillary aneurysm by incision, carried out by Syme in 1860 and published in Donald Maclean's edition of *Syme's Surgery*, is too well known to require more than its mention on this occasion.

OZONE AND ITS USES IN MEDICINE.*

By WILLIAM J. MORTON, M. D.,
PROFESSOR OF DISEASES OF THE MIND AND NERVOUS SYSTEM
AND OF ELECTROTHERAPEUTICS
IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

WRITING in the *Asclepiad* in 1890, Dr. W. B. Richardson, of London, the inventor of the ether spray for local anæsthesia, the introducer of peroxide of hydrogen into practical medicine, and in general a brilliant medical pioneer, said:

"In my essay describing the model city, Hygeiopolis, it was suggested that in every town there should be a building like a gas house in which ozone should be made and stored, and from which it should be dispensed to every street or house at pleasure. This suggestion was made as the final result of observations which had been going on since I first began to work at the subject in 1852.

"It occurred to me from the moment when I first made ozone by Schönbein's method that the value of it from a hygienic point of view was incalculable. To my then young and enthusiastic mind it seemed that in ozone we had a means of stopping all putrefaction, of destroying all causes which produce the great spreading diseases, and although increase of years and greater experience have toned down the enthusiasm, I still believe that one of the most useful fields for investigation remains almost unexplored."

Utopian as the general tenor of the above may have seemed at the time it was written, yet such is the rapid advance in electrical science, in chemical science, in bacteriology, and in the knowledge of the bactericidal properties of ozone, that in reality the day may not be far distant when Richardson's vision may easily mature into reality.

For, electrically, the ozonizer is no longer a plaything; it is a powerful instrument whose output is limited only by the limits of the horse power required to run the machinery which produces the ozone. This transition from an embryo to a mature stage is due to the growth of the induction coil or transformer, now capable of affording from five thousand to one hundred thousand volts, or possibly a million volts. Ozone, moreover, requires no rare chemical for its manufacture; it is merely ordinary oxygen of the air rendered active. With unlimited horse power and unlimited air or oxygen at command, ozone becomes, if desired, a commercial product capable of extensive use.

Chemically, also, progress is made which will work to make ozone available, for ozone has recently been compressed into a small volume and even liquefied. It liquefies about as easily as carbonic dioxide. By compressing a mixture of oxygen and ozone to one hundred and twenty-five atmospheres, Hautefeuille and Chappuis obtained gas in drops of a deep indigo color.

As a bactericide, ozone is coming no less favorably to the front.

Recently Ohlmüller and Fröhlich have killed, by means of it, the bacteria of anthrax, typhus, and cholera, as well as anthrax spores, and also the bacillus of pus; and lately I experimented upon the *Staphylococcus pyogenes aureus*, kindly furnished to me by Dr. W. H. Park, and after a few minutes' treatment by ozone the fluid turned from a milky color to limpid, and Dr. Park was unable to procure any cultivation from the treated fluid, showing that ozone really kills the pus germs, ordinarily so tenacious of life.

If, then, up to the present time—that is to say, within a year or two—many physicians and physiologists have held the opinion that ozone is not efficient to purify foul air, to disinfect clothing and dwellings, to sterilize drinking water, and in general to remedy unsanitary conditions, it is because the available apparatus produced but a small and practically valueless quantity of ozone and because the method of using it was little understood. Indeed, methods of its use are yet to be investigated.

For many years the writer has been familiar with the ozone produced in considerable quantities from influence electrical machines; has investigated and been astonished at its remarkable chemical properties; has made various attempts to employ these properties medicinally, and now finally, when the facilities are open to all for producing ozone on a large scale, has thought it would not prove uninteresting to collect some of the scattered data and present them as a whole to the members of the academy, adding some contributions of his own.

But undoubtedly the most important recent contribution toward investing ozone with properties of high value as a purifier of foul air and as a bactericide is contained in an article in a late issue of a report of the German Government (entitled *Arbeiten aus dem kaiserlichen Gesundheitsamte*, vol. viii, first part, 1892), giving in detail the results of experiments made by Dr. Ohlmüller, of the Imperial Board of Health (Ueber die Einwirkung des Ozons auf Bakterien).

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* Read before the New York Academy of Medicine, June 1, 1893.

Dr. Ohlmüller in this paper refers to the labors of Wolffhügel (Ueber den sanitären Werth des atmosphärischen Ozons, *Zeitschrift für Biologie*, vol. xi). Wolffhügel's experiments confirmed Schönbein's opinion that the ozone in the atmosphere was a disinfecting agent, and that its varying quantities, as observed in dwelling rooms by different observers, were due to the presence in greater or smaller amount of organic impurities in the air. The correctness of this assumption was confirmed by experiment. One hundred and fifty-five litres of air taken from the open showed with the ozonoscope a coloration corresponding to Scale VI. The same quantity of air passed through a eudiometer, into which dust from the street had been blown, showed only a coloration corresponding to Scales III and IV. This dust incinerated with sodium lime gave a strong ammonia reaction. A sample of the dust thus treated was exposed to the action of two hundred and sixteen litres of air and showed with the eudiometer a coloration = V of the ozonoscope. A control experiment with another eudiometer, but without the dust, gave the same scale (V), demonstrating that the organic matter of the dust absorbed the ozone from the air.

Ohlmüller is of opinion that the reason of the many failures in the attempts to ozonize the air of sick-rooms is due to the comparatively small amount of ozone employed, and which consequently was insufficient to destroy the organic matter present.

He also takes the view that the cause of the failure of so many observers (Grossmann, Meyerhausen, Szpilmann, Fischer, Oberdörfer, Sonntagg, Oerum, Wyssokowitsch, Krukowitsch, Lukaschewitsch, and others), and the varying results obtained by them were due to the relatively small quantities of ozone they had at disposal for their experiments.

For this reason it was important to investigate under what conditions ozone acts on bacteria, especially as a favorable opportunity presented itself for obtaining ozone in unlimited quantity.

He found during his researches, under these more favorable conditions, that if the ozone and the bacteria be dry, no effect of the ozone on the bacteria was apparent.

With the bacteria dry and the ozone moist, typhus bacilli were destroyed in thirty minutes with forty-six litres of ozonized air = 289·8 milligrammes of ozone.

With ozone and bacteria both moist, typhus bacilli were destroyed in an hour, one hundred and eight litres of ozonized air being consumed.

His experiments with pus showed that after twenty-four hours with a consumption of two litres of ozonized air a minute = 11·5 milligrammes of ozone, the bacilli were killed (*Staphylococcus pyogenes aureus*), as was proved by inoculation of living subjects. Typhus, cholera, and anthrax bacilli placed in distilled and sterilized water were destroyed. Anthrax spores, after passing through water, 89·9 milligrammes of ozone; anthrax bacilli, 58 milligrammes of ozone; typhus and cholera bacilli, 19·5 and 16·5 milligrammes of ozone.

His experiments with sewage from the river Spree and water containing typhus and cholera bacilli demonstrated that the ozone had a destructive action.

He sums up by stating that the results of his experiments establish with certainty that ozone has a powerful destructive action on bacteria if the water containing them is not too strongly impregnated with lifeless organic matter (*lebloser organischer Substanz*). The result is the same when the lifeless organic matter is first oxidized to a certain degree by ozone.

In connection with cholera, now that ozone is known to be absorbed and again given up from fluids, we must note a valuable contribution, entitled Cholera; its Prevention and Treatment, by Elmer Lee, M. D., of Chicago, and Hydrogen Peroxide in Contagious Diseases, by Cyrus Edson, M. D., reprint from the *Doctor of Hygiene* for April last.

Both Dr. Lee and Dr. Edson (137) recommend free irrigation of the lower intestine as devised and recommended by Dr. Lee, and the free administration of peroxide of hydrogen, both by the stomach and by intestinal irrigation.

Dr. Edson says: "It is my opinion that this treatment will prove to be *par excellence* the treatment for cholera nostras, dysentery, typhus, and typhoid fever." As oil vehicles may carry as high as twenty-five volumes per cent. of ozone, it is obvious that they likewise may be effectually employed in the same diseases.

Fluid Vehicles for Ozone.—The Ozone Company have put upon the market several fluids containing ozone, giving to them the names aquozon, therapol, aerozol, kodozonol, and kreozonol. In spite of these unattractive names these liquids contain a large volume per cent. of ozone.

Ordinarily a hundred volumes of water will hold but half a volume per cent. of ozone, but by adding to the water about two per cent. and a half of hypophosphite of sodium it will hold about three volumes per cent. of ozone.

Aquozon, ozonized water, contains about three volumes per cent. of ozone.

Therapol, a bland vegetable oil ozonized, contains about eight volumes per cent. of ozone.

Aerozol, a combination of essential oils, the principal one of which is oil of spruce, contains twenty-five volumes per cent. of ozone.

Kodozonol is simply ozonized cod-liver oil; it contains about six volumes per cent.

Kreozonol is an ozonized oil of tar; it contains about ten volumes per cent. of ozone.

The volume percentage is determined by the amount of ozone set free by various reagents. The fact that aquozon, therapol, and aerozol contain ozone, and contain it in the percentages named, is established by the examination and report of Professor R. A. Witthaus. That oils absorb ozone in very large quantity and part with it slowly indeed requires no special corroboration, since it has been well known for a long time. The combination is not an oxidation, as one might expect, but the ozone is taken up by the oil as O_3 and yielded up as O_3. In the aquozon preparation the hypophosphite of sodium is not oxidized and converted into a phosphate, but it remains intact, and tests applied show the reactions of both the hypophosphite and the ozone.

Some of the writer's personal experiences and suggestions in regard to the therapeutic uses of ozone follow and may be of interest in advancing its employment.

His attention was first called to the therapeutic effects of ozone in 1884 when experimentally he caused a child suffering from severe chronic nasal catarrh to inhale the ozone produced by an influence machine. The acrid discharges, the falling back of secretions into the throat, the altered voice, and the continual sounds of attempts to clear the passages ceased after six inhalations. A sister of this child was also treated and cured.

Last fall, procuring a large machine from the Ozone Company, I made some further experiments as occasion arose. The machine itself will be described farther on.

My first effort was to obviate the irritating properties of the ozonized air delivered from this or any large machine.

It is obvious that the electric effluvium, as it crosses the air space, will affect the nitrogen as well as the oxygen of the air. Thus not only is O_2, common oxygen, converted into O_3, or ozone, but also nitric acid and other noxious nitrogen compounds are formed. Accordingly, I used a wash bottle containing a solution of caustic soda or potash to pass the output of the machine through and to absorb the nitric acid. The ozone is now pure. This has added greatly to the respirability of the gas and obviated deleterious effects due to the nitrogen compounds. But even the washed gas if inhaled when too strong may irritate the bronchial mucous membrane and produce an asthmatic attack, with suffocative breathing, cough, and final mucous expectoration. As gutta percha is quickly destroyed, as well also other organic substances, I have had attached a goose-necked glass tube ending in a perforated cork. A variety of glass inhaling tubes may be attached to the cork; for the nose, simple straight tubes rounded at one end.

The preparations of ozone and the gas itself, when administered medically, part with their ozone within the human economy—just where, we would wish some one to determine. The most hopeful and general view is that the ozone increases the oxyhæmoglobin. This at least is conceded when ozone is taken into the lungs in gaseous form; the same may be true of the liquid preparations.

As it does not come within everybody's reach to own a large ozone machine, the importance of these preparations which hold ozone until it may be liberated within or upon some part of the patient is manifest.

The oil preparations give up their ozone when taken internally, and equally so when applied to external parts, as, for instance, to ulcers, diphtheritic membranes, and whereever a wound dressing is required. It is noted that these oils relieve pain more quickly than if they did not contain ozone.

Another improvement to the commercial machine was to have attached to it means for measuring its output in order to be able to express dosage in exact terms. This was effected by the aid of a meter to measure the amount of oxygen or air passed through the ozonizing tubes and collecting the gas to estimate by reagents the number of milligrammes to a litre.

The following table exhibits the measurements of ozone in oxygen and in air produced by the generator of the Ozone Manufacturing Company's manufacture.

Ozonized	oxygen,	1 litre	a min.;	quan. of	ozone,	79·2 mgm.
“	“	2 litres	“	“	“	135·6 mgm.
“	“	3 “	“	“	“	148·08 mgm.
“	“	4 “	“	“	“	168·0 mgm.
Ozonized air,		1 litre	“	“	“	15·84 mgm.
“	(3 litres)	$\frac{1}{10}$ cub. ft.	“	“	“	45·84 mgm.
“	(6 litres)	$\frac{2}{10}$ “	“	“	“	70·0 mgm.

$\frac{1}{10}$ cubic foot = about 3 litres.

Nasal Catarrh.—Without making any especial effort to secure cases and purely as an experiment, I have treated a large number of nasal catarrhal affections by ozone, and have been surprised at the good results. Running the machine at a rate which produces about seventy milligrammes per minute of ozonized air, purified from nitric acid by the caustic soda, I cause the patient to blow and cleanse the nose as thoroughly as possible, to take a deep inspiration and hold the breath, allowing the ozonized air to be blown up one nostril and out at the other as long as the breath could be held; the patient is then instructed to blow the ozone gas out of the nostrils before inspiring, in order to avoid drawing the gas, in this strength irritating, into the lungs. This is repeated about six times to each nostril. The first feeling is one of intense dryness of the mucous membranes; then follows possibly a slight watery mucous discharge lasting for a few hours, and then next and subsequently the patient experiences great relief. This treatment was pursued thrice weekly, and five to ten treatments were sufficient to effect results. After treating ten cases successfully, and not caring to follow up nasal catarrh any further, I sent an eleventh case, a boy of twelve, who had suffered for two years, and who was so remarkably improved in five treatments as to attract much attention from his family, to my friend Dr. Clarence C. Rice to examine, with the suggestion to follow the matter up. The boy was a confirmed mouth-breather, his nose was thickened and red, his speech altered, and a continuous acrid discharge caused his upper lip to be constantly excoriated. He received ozone treatment two or three times weekly during about three weeks. The acrid discharge ceased, the lip healed, and he breathed well through the nose. Dr. Rice's examination confirmed these statements as to recovery and called attention to a rather marked adenoid enlargement in the vault of the pharynx. Following this case, Dr. Rice and I treated eight more cases on the indications and by the method above outlined. They were cases of atrophic rhinitis and dry pharynx. They all improved.

Delay in publishing this paper enables me to insert Dr. Rice's description of these cases, embodied in a communication read before the American Laryngological Association a few weeks after this paper was read at the New York Academy of Medicine:

"Three of my cases were advanced to an extreme condition of atrophic change, so familiar to all of you. In two the turbinates had almost entirely disappeared. The sæptum was ulcerated, and the secretions were collected in thick scabs. Of the two cases I sent to Dr. Morton's office, one was far advanced in atrophic change and the second was but moderate in degree. All of the cases were treated with the ozone gas from five to eight minutes. In Dr. Morton's cases the gas was passed into the nostrils three times—that is, while the patient was holding the breath for three different periods. The immediate effect of the ozone gas was alike in kind in all the cases, but differed in degree according to the volume of the gas employed, and probably according to the sensitiveness of the nostrils. It produced a mild smarting of the nasal mucous membrane for several hours. It increased the secretions of mucus very markedly for eight or ten hours. The congestion of the mucous membrane of the nose was also exaggerated. In some of the cases, where the volume of gas was large, the patients complained of headache, which, however, had disappeared by the following day. It was almost the universal testimony of these patients that the nasal pharyngeal mucous membrane was less dry, and that the tenacious secretions were more easily got rid of. For the first twenty-four hours after the ozone was used the patient had the symptoms of a cold in the head, but after that the nose felt unusually clear and the mucous membrane more comfortable than before the application of ozone.

"The milder cases of atrophic catarrh were very quickly benefited, and remained improved for several days after the inhaling of the ozone, but most of them relapsed somewhat. The benefit was again obtained, however, by the further treatment with ozone. Whether permanent moistening of the mucous membrane and decrease of secretions can be obtained by the use of ozone can be told only after a longer trial. In the more severe cases the benefit was not obtained so quickly. In all the cases we instructed the patient to discontinue the use of all sprays and douches while we were using the ozone. In a case of ozæna treated by this method the deodorizing power of the ozone seemed to be as marked as is obtained by the use of peroxide of hydrogen. The odor from the nostrils was very fœtid, but disappeared altogether after the second inhalation of ozone gas." (*New York Medical Journal*, August 19, 1893.)

From further experience I am satisfied that results are equally good in hypertrophic catarrh, and also satisfied that a large volume of ozonized air—from 45 to 70 mgms. a minute—is essential to success in nasal cases. It is a great mistake to suppose that the mere smell of ozone will cure rhinitis.

Bronchitis.—Reducing the output of the machine to a point affording about one milligramme per minute, I have caused ozonized air, purified from nitric acid as before, to be inhaled in bronchitis, both acute and chronic, with great relief to the patients.

I cite but one case, since I simply intend my paper to be suggestive:

CASE I. *December 15, 1891.*—Lieutenant F. P. F., aged thirty-six years. Between twenty and twenty-five had several pulmonary hæmorrhages. Three years ago, after exposure in the Northwest, had a severe attack of what was carefully diagnosticated to be capillary bronchitis, lost forty pounds in weight in ten days, had severe cough, and other characteristic symptoms. Has had a persistent and severe cough ever since; sputa dark yellow, blood-flaked, and adhesive. Has severe and constant pain in the left side alongside the sternum on a level with the fourth rib. Had been treated variously and with no relief for the chronic bronchitis which had supervened upon the cessation of the acute attack of capillary bronchitis. Physical examination revealed mainly the usual bronchial râles. He was treated four times—the 15th, the 19th, the 23d, and the 27th of December. The last entry in the note-book is: All the symptoms ceased; no cough at all.

Unfortunately for scientific accuracy, the treatment was by statical electricity as well as by ozone inhalations. Since the case is somewhat unique I read the patient's own letter written January 25th, about a month later. He says:

"BEDLOE'S ISLAND, NEW YORK HARBOR, *January 25th.*

"MY DEAR DOCTOR: You have yourself to blame that you have not seen me lately, for since the last treatment I have not coughed once. I know that this reads like the remarks about patent medicines, where two bottles make the patients five years younger; but I never expected to be free from that infernal cough, and having to get up in the night and shut myself up in a closet to avoid waking the rest of the family up. When I catch a little cold now it goes off again and I never have the faintest pain in my chest. This is pretty good after three years of constant trouble that even the climate of California failed to in the least alleviate. I am coming up some day soon to show myself. Sincerely yours, F. P. F."

Phthisis.—I will likewise offer but one case of phthisis:

Miss R., aged twenty-eight years. Referred to me by Dr. Frederick A. Burrall, of this city, with history of active pulmonary tuberculosis. Has had several attacks of hæmorrhage; has dullness under the right clavicle and dry pleurisy; has harassing cough, frequent slight hæmorrhages; can not retain her morning meal, and had reached a point where she was losing weight and her food was not assimilated. Duration of disease about two years. The noon temperature was usually about 99·5°; after treatment it was lowered to about 99°, though these relations varied from time to time. The patient received three treatments a week only. Since the third she has never failed to keep down her breakfast. She has received about twelve treatments and has gained six pounds in weight. Both statical electricity and ozone were administered. Her physician reports: "The cough has much diminished, the nausea quickly disappeared, patient has gained six pounds, and has evidently assimilated food and remedies. I notice the same improved pharyngeal hue from pale to ruddy which I noticed in the previous case [under the same treatment]. Her unfavorable symptoms are all generally ameliorated."

This was a year ago, and from reports received last summer I understand the patient retained the improvement gained.

Bactericidal.—Dr. William Hallock Park, of this city, connected with the laboratory of the Vanderbilt Clinic, College of Physicians and Surgeons, kindly consented to join me in some experiments upon killing bacteria. We have not yet completed these experiments, owing to unforeseen delays, but I submit a preliminary report from Dr. Park which is very satisfactory, so far as relates to the action of ozone when it is passed through fluids holding bacteria.

March 26, 1893.

DEAR DR. MORTON: The cultures made on the gelatin plates proved the preliminary report to be correct.

A summary of the experiments is as follows:

A considerable amount of a twenty-four-hours' growth on agar of the *Staphylococcus pyogenes aureus* was scraped off and suspended in five cubic centimetres of sterilized filtered Croton water.

A culture of Klebs-Loeffler or diphtheria bacilli was treated in a similar way.

Small pieces of sterilized absorbent gauze were saturated with these cultures thus suspended in water and the pieces placed on a sterilized platinum wire net. This was placed in a wide tube through which a fifth of a cubic foot of ozonized air passed per minute. The bacteria were exposed different lengths of time—the staphylococci from five to thirty-five minutes, and the diphtheria bacilli fifteen to forty-five minutes. On removal the gauze was still moist.

Cultures of the staphylococci were made on agar and in gelatin. Those exposed for five minutes gave about as many colonies as the control, and those exposed the longest (thirty-five minutes) about half as many. The cultures of the Loeffler bacilli were made on solidified blood serum.

Those exposed fifteen minutes showed some diminution in the number of colonies on the cultures and those forty-five minutes still more, but still there were very abundant colonies.

The results showed that the staphylococci and the diphtheria bacilli when held on a moist piece of gauze are not greatly injured by exposure of thirty to forty-five minutes to a current of ozonized air.

The second experiment was to pass the ozonized air into the test tubes containing a watery suspension of the staphylococci. The air was passed into the mixture for five, ten, and fifteen minutes. The cloudy fluid was seen to quickly become clearer under the action of the ozone.

Cultures were absolutely sterile.

The result therefore showed that in the shortest trial (five minutes) all the staphylococci were killed by the action of the ozonized air dissolved by the fluid.

If you would like any fuller report let me know. I think it would be interesting to try some further experiments in passing the ozone into fluids. This part seemed very successful.

Very sincerely,
[Signed.] William Hallock Park.

Again, in the way of suggestion, I can see no good reason why gaseous ozonized air or oxygen may not be administered *per rectum* in cholera and typhus and typhoid fevers, just as in the familiar rectal gaseous administrations of sulphureted hydrogen for phthisis, though I am not aware that this method has been suggested or utilized in any disease.

There is another perhaps unimportant but novel point to which I may call attention. Taking, for example, iodide of potassium, free iodine is produced in its nascent state when ozone comes into contact with it.

Supposing that ulcerations, skin diseases, the nasal and throat cavities and other mucous surfaces and numerous conditions which will occur to all, be treated to a solution of iodide of potassium or any similar solution acted upon by ozone. The iodine or other liberated chemical acts in its nascent state upon the tissue.

In this manner the nose and throat might be first treated to a medicated spray and then to ozonized air, and the result be a new compound applied topically and nascently.

I have dwelt perhaps a little at length upon some of the therapeutic possibilities of ozone. There can be no doubt, it seems to me, that now that ozone may be generated on a large scale, its therapeutic properties should be tested on an equally large scale in hospitals, and definite knowledge be obtained. More frequent and better opportunities present themselves in hospitals for testing the therapeutic value of ozone than are afforded in private practice. Ozone has too long been a sort of medical chimera; it is time that some one dispelled the illusions and laid bare the facts. One truth is clear—it is an oxidizing agency scarcely if at all inferior to nascent oxygen, while it possesses the advantage over nascent oxygen that it exists in gaseous form and may be disseminated as a gas into parts where nascent oxygen can not be utilized. Nascent oxygen can not purify the air of a hospital ward nor can it enter the lungs; its action is strictly localized to the very spot of its birth.

If we turn to the prophylactic and hygienic properties of ozone we must be struck with admiration.

Ozone attacks and renders innocuous organic matters such as smoke, sulphur compounds, and the great variety of organic matters which contaminate the air we breathe. Or, if we put it another way, these organic matters destroy or absorb ozone. Think of the quantity of ozone that would be destroyed in hospital wards, theaters, public halls, and schools.

Again, ozone sterilizes and purifies water; the most impure water can at once be rendered sweet-smelling, free from organic impurities, and free from pathogenic germs by passing ozone through it.

The purification of the water for drinking purposes of the river Spree is one of the prime objects of the investigations by the Imperial Board of Health of Germany, from whose report I have given some data.

It has been stated to me that our own Croton Water Board has appropriated a large sum of money to endeavor to secure the purification of Croton water by ozone. A gentleman interested stated that a first idea was to construct a great screen of platinum wire, through which the water should pass, while at the same time the screen formed an electrode to the current from great dynamo machines at work upon the banks of the river. One objection to this plan was that the sand would cut and wear away the wire —a matter of no small importance, since its value was estimated at twenty-eight thousand dollars.

In sufficient strength and quantity and in the presence of moisture ozone is, as I have abundantly shown, a disinfectant. When we recall the ever-latent danger of an invasion of cholera, and recall equally the exacting demands of a strict quarantine disinfection, we can not but feel that ozone, as now producible in quantity, may most properly form the subject of investigation on the part of our own board of health.

The problems which beset the utilization of ozone as a therapeutic agent are manifold—more difficult of solution perhaps than those which surround its introduction into the public uses outlined by Dr. Richardson in the opening sentence of this paper; but when experimentation and observation, more accurate and of wider scope than any now at command, shall be available, I have no doubt that ozone, like many another idea that has floated upon the medical horizon, will assume an important relation to the health of the individual and of the community.

(To be continued.)

NOTE UPON PROFESSOR ANSCHÜTZ'S PURIFIED CHLOROFORM

(SALICYLIDE CHLOROFORM).

By GEORGE RYERSON FOWLER, M. D.,
BROOKLYN,
SURGEON TO ST. MARY'S HOSPITAL AND THE METHODIST EPISCOPAL HOSPITAL.

In this country the question as to the relative merits of ether and chloroform as anæsthetic agents seems to have been pretty generally settled in favor of the former. In Europe, however, the contention is still going on, particularly in Germany and France. In the former country chloroform still has the preference, and every effort is being made to improve the quality of the latter agent and the methods of administration thereof. In France ether is more or less employed, particularly in operations of long duration, as well as in weak children and old persons. At Kocher's clinic in Berne in the former class of cases the anæsthetization is commenced with chloroform, and when the process has been carried beyond the stage of excitement or that at which irritation of the air-passages occurs, ether is substituted. In Ollier's clinic at Lyons and in Jouillard's service in Geneva there has been an almost complete revulsion in favor of ether, the advantages attending its use being considered as far outweighing its inconveniences.

In spite of the fact that in this country ether is looked upon as the anæsthetic of choice, the expurgation of chloroform from surgical practice must be looked upon as very undesirable, to say the least. Practical surgeons, therefore, will always welcome every suggestion which will hold out the hope of eliminating the dangers incident to the employment of this agent, for with every care on the part of the administrator cases of fatal chloroform narcosis continue to be recorded.

It is more than probable that a certain proportion of these accidents are due to the use of an impure article; in addition to this, the technique of administration must govern, to a considerable extent, the measure of safety or of danger in individual cases.

Professor O. Weitzel, of Bonn,* has recently brought forward a new chloroform for which the claim is made by Professor Anschütz, its originator, that by the employment of salicylic anhydride ($C_7H_4O_2$), obtained by the action of phosphorus oxychloride on salicylic acid, forming what is known as salicylide, for purposes of purification, an absolutely pure chloroform results. By the action of the salicylide upon the chloroform a salicylized body is obtained in which the chloroform serves the same part as the water of crystallization in many salts, and consequently when heated the chloroform is separated in a pure state.

Professor Weitzel's experience with this product has been so favorable that I have been induced to import through Messrs. Lehn & Fink, of New York, a supply for trial. For the past month I have employed the preparation, and thus far have been exceedingly well pleased with the results.

The first point to be noted in connection with its use is the fact that, owing to the absence of that pungent odor so commonly present in ordinary chloroform, there is a marked absence of hesitancy in the respiration and the occasional refusal to breathe observable in many cases where the latter is employed. The new preparation possesses a rather pleasant aromatic odor.

Whatever the cause, it is a well-known fact that in many persons, particularly those who have been in the habit of imbibing rather freely of alcoholic stimulants, even with the most careful administration of ordinary chloroform, there is a well-marked stage of excitement, this frequently amounting to violent struggling. Even in this class of cases this stage of the administration is only marked by an occasional exclamation when the salicylide chloroform is used.

The narcotic effect of the agent is obtained somewhat less rapidly than with common chloroform, and the patient must be carefully watched during the progress of the operation in order that he does not come out from under its influence. The first-named is not considered a disadvantage by skilled anæsthetizers, nor even the second, for the reason that so profound an effect is not obtained, the purposes of the anæsthetization are completely fulfilled, and the element of danger is largely eliminated. Complete anæsthesia can be brought about in ten minutes; a longer time is very exceptionally required.

Every surgeon of experience dreads the cases in which chloroform produces a very rapid and at the same time a profound narcotic effect. In fact, statistics of fatal chloroformization show that in the large majority of cases the dangerous symptoms supervened very shortly after the commencement of the administration. It is likewise true that the cases in which violent struggling takes place are also to be dreaded, and many surgeons refuse to permit of the continuance of the chloroform, substituting ether therefor, even when this has been apparently contraindicated, preferring to accept the chances of the supposed untoward effect of this agent upon atheromatous vessels, weakened respiratory organs, or diseased kidneys, rather than risk the occurrence of a catastrophe upon the operating table.

Next, the condition of the pulse is of importance in connection with the employment of the new chloroform. The heart's action, in no case under my observation, has been either accelerated or weakened by its use. On the contrary, when the pulse has been weak and excited prior to the administration, as frequently observed in nervous women, as soon as the effect of the salicylide chloroform has been obtained, a most pronounced improvement has been observed in this respect. A pallid face under these circumstances becomes of the pinkish hue of health, and remains so until long after the effects of the chloroform wear off, provided, of course, that excessive loss of blood, the prolonged manipulation of the abdominal contents, or other untoward circumstances incident to the operative procedure do not occur to produce the opposite effect.

Next, it is to be noted that patients recover consciousness much more promptly following the administration of Anschütz's chloroform than with the article heretofore in use. This occurs without those much-dreaded after-effects which are so marked a feature following anæsthetization with either chloroform or ether, as usually employed. In the case of an old man of seventy-four upon whom I operated for cerebellar abscess following middle-ear disease, in the practice of Dr. Zabriskie, of Glen Cove, the patient arose from the operating table and walked across an intervening parlor to his bedroom without apparent effort, within fifteen minutes after the withdrawal of the anæsthetic. This is not an exceptional experience, for it has been repeatedly noted that a marked absence of the usual head-symptoms, restlessness, muscular weakness, nausea, vomiting, and anorexia, is a pronounced feature of the use of this agent.

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* *Centralblatt für Chirurgie*, 1893, No. 52, p. 1151.

A word as to the method of administration: At the present day no surgeon of experience will permit his anæsthetizer to administer chloroform by any other than the drop method. The days of forcing the administration by *pouring the chloroform in a stream* upon the mask or folded napkin have gone by. Steadily supplying the chloroform drop by drop, keeping up by this means the administration of a small dose frequently repeated, produces the desired effect in a length of time sufficient for all practical purposes, and relieves the operating surgeon's mind of much anxiety in this respect. While I believe that chloroform purified by Professor Anschütz's process can be given with somewhat greater freedom without the risks incident to rapid administration of common chloroform, yet I have up to the present time refrained from pursuing a course in this respect other than that which I would follow in the use of the latter. In other words, I have followed the drop-by-drop method with the head lowered, precisely as I would in ordinary chloroformization.

The quantity of the new chloroform required, even in the hands of those not skilled in its use, averages about one cubic centimetre for each three minutes of complete narcosis. In case the anæsthetizer is accustomed to its use, and keeps the patient just evenly balanced between unnecessarily deep narcosis and the beginning of the return of consciousness, a smaller quantity will suffice.

It is furnished by the manufacturers * in brown-colored graduated bottles containing fifty grammes each, a quantity sufficient for the purposes of an average operation. An exceedingly simple dropper device is furnished with each bottle.

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* Actien-Gesellschaft für Anilin-Fabrikation, Berlin.

THE OXYTOCIC ACTION OF SALICYLIC ACID AND ITS COMPOUND WITH SODIUM.

By HIRAM N. VINEBERG, M. D.

The salicylates are so frequently administered that it is well to be familiar with all their actions and effects. There is one property they possess which I believe is not generally known. On looking up the works on therapeutics that I possess (Ringer, Wood, Bartholow, Edes) I find no mention of the action of the salicylates on the genital organs of women. This is very strange, for they certainly do have a very marked influence as an oxytocic and emmenagogue. B. Schuchardt † drew attention to the fact that under the administration of salicylates the menses became more profuse and lasted longer. He observed also four cases of abortion which he attributed to the remedy used for another purpose. Quite recently C. Binz * has written a paper upon the action of salicylic acid on the uterus. He experimented upon eighteen guinea-pigs, and of these eight aborted as a result of the administration of the drug. But the dose was so large in three of these as to cause toxic symptoms; hence, they must be excluded. In the other five, however, there seems no doubt, in my mind, as to the abortion being directly due to the drug.

Within the past few months I have observed two cases in which the administration of salicylate of sodium seemed to have a decided effect upon the uterus.

In the one case the woman was seized with acute articular rheumatism on the fourteenth day after a normal confinement. The labor and puerperium were normal in every respect. The lochia had been normal and before the rheumatism had set in they were scanty in amount and grayish-yellow in color. Salicylate of sodium was given in fifteen-grain doses every three hours, and as the attack of rheumatism was very severe the remedy for a few days was given every two hours. On the second day of its administration the patient had quite a severe uterine hæmorrhage, although bimanual examination of the uterus showed that involution had progressed normally. During the three weeks that the drug was administered the woman had more or less uterine hæmorrhage most of the time, and it ceased only when the salicylate was discontinued.

Involution of the uterus, however, seems not to have been interfered with, for at the end of six weeks the uterus was about the size of a fully involuted uterus and was only a slight degree larger than the healthy non-parous organ.

The second case occurred in a young, delicate girl of eighteen, who had been under my care for some time for scanty and delayed menstruation and for general debility. She had always been delicate and her development in general seemed to be below the normal standard. My treatment, therefore, was directed to her general condition, leaving the uterine function to take care of itself. Recently she had an attack of acute amygdalitis, for which her physician prescribed fifteen grains of salicylate of sodium every three hours. She and her mother were surprised to find that menstruation had set in on the second day of the illness and fully a week sooner than it had ever occurred before. It was also decidedly more profuse than it had ever been. She suffered from "cramps" with the onset of the flow, but not any more than usual.

As a result of my own observations in the foregoing cases and also in others, and from a perusal of the literature on the subject, the following conclusions seem warranted:

1. Salicylic acid and its compounds may be found useful in scanty and delayed menstruation.

2. They should not be administered to pregnant women who have a predisposition to abort or who suffer from menorrhagia and metrorrhagia.

3. Their administration should be watched carefully in all cases of pregnancy, and on the appearance of any "show," or anything resembling labor pains, they should be discontinued.

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† *Corresp. Blätter d. allge. ärztl. Ver. f. Thüringen*, 1886, No. 7.

* *Berl. klin. Woch.*, 1893, No. 41.

THE
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NEW YORK, SATURDAY, JUNE 23, 1894.

THE ELASTICITY OF THE BRAIN.

In No. 333 of the *Proceedings of the Royal Society* there is an account, communicated by Mr. Horsley, of an investigation, by A. G. Levy, M. B., of London, entitled A Research into the Elasticity of the Living Brain and the Conditions Governing the Recovery of the Brain after Compression for Short Periods. The investigation was conducted in the laboratory of the pathological department of the University College, and the British Medical Association, at the recommendation of its scientific grants committee, contributed toward the expense attendant upon it. The author remarks that, in view of the great frequency of compression of the brain as a pathological condition, it had seemed very advisable to attempt to obtain some knowledge of the elementary factors governing the physical changes in the brain substance due to mechanical pressure. Reference is made to an article by Grashey, Ueber Hirndruck und Hirncompression, published in the *Allgemeine Zeitschrift für Psychiatrie*, vol. xliii, in which, it is remarked, proof was shown that the coefficient of compressibility of the dead brain was slightly less than that of water—in other words, that under any ordinary pathological condition the brain tissue was incompressible. The author says that his attempt to determine the elasticity of the living brain—*i. e.*, of the brain mass including its full complement of circulating blood and lymph—and further to test the truth of the generally accepted view that the elasticity of the brain was proportional to the blood pressure, was undertaken at the suggestion of Professor Horsley, who devised an apparatus for the purpose and aided the author with advice and suggestions.

The brain was experimented upon *in situ*, the influence of the cerebro-spinal fluid being excluded by the mere fact of the skull having been opened and the membranes partially reflected, thus freeing the fluid from all tension. In the first place, there were considered the results of experiments performed upon freshly exposed brains, the blood pressure being at its normal height, in order to arrive at some conclusion as to the normal elasticity of the brain. The downward movement of a plunger was measured after a given interval of time, and the extent of this movement was termed the "excursion." The recovery of the brain surface, to the extent of which the term "recoil" was applied, was measured until its further development ceased to be perceptible. The general character of the "excursion" was found to be that of a rapid plunge downward taking place within the space of one or two seconds, followed by a much more gradual compression. Its extent varied within a considerable range in different animals; thus, a weight of fifty grammes applied for a minute produced an "excursion" which varied in different dogs from 4·5 to 7·3 millimetres. It also varied notably with the weight employed. There was no obvious relation between the depth of the "excursion" and the blood pressure. For convenience of expression and for the purpose of comparison, the ratio of the "excursion" to the "recoil" was expressed in the full paper in the form of a fraction, and this ratio was termed the "proportionate recoil." The smaller this fraction the feebler was the elastic reaction it denoted, and *vice versa*. The comparison of the ratios derived from experiments performed under like conditions upon different animals brought out the striking approximation which they bore to each other, whatever the length of the "excursion" or whatever the existing blood pressure might be. Such deviations from the average as the ratios presented could not be found, moreover, to have any relation to variations in either "excursion" or blood pressure. Compression by a fifty-gramme weight for a period of from thirty to sixty seconds yielded an average "proportionate recoil" of one half. A further comparison showed definitely that the longer was the period of compression the less was the "recoil"; thus, with a compression of only two seconds the reaction was sometimes almost perfect, whereas compression lasting six minutes yielded a ratio of one divided by 2·74. In like manner heavier weights damaged the brain in a way prejudicial to its recovery.

A series of experiments were performed with a view to comparing the elasticity of the brain at the normal blood pressure with the elasticity of the same brain at an artificially lowered blood pressure. The first method employed was that of producing a large fall of blood pressure by bleeding. The results tended to confirm the impression that there was no constant relation between brain elasticity and blood pressure. The experiments of this series were somewhat vitiated by the partial collapse of the cerebrum which ensued during the process of bleeding, so a second series was instituted in which the blood pressure was lowered under the action of amyl nitrite; the brain, becoming flushed with blood at the moment of the administration of the drug, had no tendency to collapse. Under the influence of the nitrite the cerebral vascular conditions were such that the elasticity was actually increased, thus conclusively demonstrating that the latter did not depend upon the central arterial pressure.

Further experiments were performed in view of the influence believed to be exerted by venous pressure upon the cerebral circulation. The accessible cranial veins were exposed and clamped in succession, and the variation in the intracranial pressure thus induced was measured. The results tended to show that the increase of intracranial pressure must be considerable to influence the elasticity in even a small degree. Experiments performed upon brains which had undergone prolonged or severe compression showed that a considerable increase of arterial blood pressure was quite unable to restore the volume of a brain thus damaged, whereas an increase of venous pressure obtained by asphyxiation brought about this restoration rapidly and usually completely.

HYSTERICAL APOPLEXY.

At a meeting of the Paris *Société médicale des hôpitaux* held on the 25th of May M. Comby, according to the account published in the *Mercredi médical* for May 30th, remarked that hysterical apoplexy had been well known since the cases that been reported to the society by M. Dubove and M. Dumontpallier, since the appearance of M. Achard's thesis, in 1887, and since the publication of the works of Charcot and his pupils. There was, therefore, nothing surprising about the case which he would speak of, but it had appeared to him interesting by reason of the ætiological conditions that had given rise to it and by the evolution which it had presented. On the 20th of April a woman, thirty-eight years old, had entered the Tenon Hospital for left hemiplegia, with which she had suddenly been attacked on the day before. She had had a previous attack in 1889, under the following conditions: During a thunderstorm two of her children were struck dead at her side with lightning, and she herself was rendered unconscious. When she came to herself it was perceived that she had complete motor and sensory paralysis of the left side. The hemiplegia disappeared in three weeks. In July, 1891, two years after the first attack, the patient was again seized with apoplexy on a stormy day. On the 9th of April, 1894, the day preceding her entrance into the hospital, her trouble had once more been renewed during heavy or tempestuous weather. Her condition was that of apoplexy, followed by left hemiplegia. An objective examination revealed the existence of complete paralysis with hemianæsthesia, and the diagnosis could only be that the affection was of an hysterical nature. The case was presented as a very striking example of recurrent hysterical apoplexy.

M. Comby remarked that this trouble was not rare, for at that time there were in his service two other patients who had been seized with hysterical apoplexy under analogous conditions. One of them was a woman who, on seeing her child set fire to some fabrics in her chamber, had fallen unconscious and awakened some time after with left hemiplegia accompanied with anæsthesia. At the time of the report the power of motion had returned, but the anæsthesia persisted. The other case was that of a man, somewhat given to alcohol, who, five days before, in consequence of a very disturbing occurrence, had suddenly been stricken with apoplexy, and there was still left hemiplegia with complete anæsthesia. M. Comby added that it was well to bring such cases to notice, to aid in guarding against errors of prognosis.

MINOR PARAGRAPHS.

THE MEDICAL SCHOOL OF COLUMBIA COLLEGE.

It is announced that, beginning with the academic year 1894 to 1895, the work required of students who are candidates for the degree of M. D. will cover four years of study according to the curriculum set forth. This extension of the course does not affect students who have already matriculated and attended a session. The first year's course includes physics and chemistry, with medical chemistry; anatomy; normal histology; and physiology. The second year's course includes anatomy; normal histology; physiology; pathological anatomy; bacteriology; materia medica and therapeutics; toxicology; and obstetrics and gynæcology. The third year's course includes materia medica and therapeutics; pathological anatomy; pathological histology; the practice of medicine, including the diseases of the mind and nervous system; the principles and practice of surgery; obstetrics and gynæcology; venereal diseases; diseases of the eye; and diseases of the ear. The fourth year's course includes the practice of medicine, with the diseases of the mind and nervous system; clinical microscopy; the principles and practice of surgery; orthopædic surgery; obstetrics and gynæcology; diseases of children; diseases of the skin; and diseases of the throat and nose. Fourth-year students will be required to choose one or more from a list of elective courses of which the following are proposed: Surgical diagnosis; obstetrics; the diagnosis of nervous diseases; the localization of nervous diseases; insanity (a clinical course); ophthalmology; venereal diseases; the therapeutics of diseases of the skin; contagious diseases; microscopical technology; the pathological anatomy and histology of the organs of generation; the pathological anatomy and histology of the nervous system; cellular biology; comparative embryology; human and comparative morphology; neuro-muscular physiology; physiological technique; physiological and experimental psychology; philosophy; botany; chemistry; and physics.

THE SANCTITY OF THE HYMEN.

Dr. E. S. McKee, of Cincinnati, is engaged in the laudable endeavor to impress upon his professional brethren the importance of preserving the hymen. In a reprint from a work by Dr. A. Martin, of Berlin, he adds to the melancholy

So Mancher suchte sie im Dunkeln,
Und fand statt ihrer nur Karunkeln

this further couplet:

Magnum est crimen
Perrumpere virginis hymen.

A LIKELY STORY!

Every now and then something is printed in one of the newspapers that may well lead to doubt as to whether any sort of attempt is made by them to distinguish between what is within the bounds of probability and what is palpably and grotesquely incredible. For example, one of the morning papers lately printed a dispatch from Chicago announcing that some doctor of that city had been "commanded" by the German Emperor to visit the military hospitals of the empire for the purpose of instructing our German colleagues in the cure of certain diseases. It was added that this individual would receive the highest military honors in Germany, and that he would be escorted in state from the frontier to Berlin by a detachment of the Imperial Guard!

ITEMS, ETC.

The Cleveland Medical Society held its second quarterly meeting on Friday evening, the 22d inst. The programme included an address on The National and Municipal Relations of the Medical Profession, by Dr. William Pepper, of Philadelphia; and remarks on Leprosy in Spain and Morocco and Medicine among the Moors, by Dr. William T. Corlett.

Syracuse University.—The twentieth annual meeting of the Syracuse and Geneva Alumni Association of Syracuse

Medical College was held in Syracuse on Thursday, the 14th inst. An address was delivered by Dr. A. F. Vandeboncoeur.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 19, 1894:

DISEASES.	Week ending June 12.		Week ending June 19.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	5	2	6	1
Scarlet fever	116	14	114	17
Cerebro-spinal meningitis	1	1	4	4
Measles	117	5	131	12
Diphtheria	208	43	244	60
Small-pox	12	3	15	3
Tuberculosis	145	135	108	84

The Berlin Obstetrical and Gynæcological Society.—At a meeting of the *Gesellschaft für Geburtshilfe und Gynäkologie* held on April 13th, a report of which is published in the *Centralblatt für Gynäkologie* for May 26th, Dr. T. Gaillard Thomas and Dr. Thomas Addis Emmet, of New York, and Dr. Theophilus Parvin, of Philadelphia, were nominated as honorary members.

Yale University.—The annual address in medicine, on The Illustrious Boerhaave, will be delivered by Dr. William T. Lusk, of New York, on Tuesday, the 26th inst. In the evening the faculty will give a reception in honor of Dr. Lusk at Dr. William H. Carmalt's house.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 10 to June 16, 1894:*

Gibson, Joseph R., Major and Surgeon, Fort Snelling, is granted leave of absence for one month on surgeon's certificate of disability, with permission to apply to the proper authority for an extension of three months.

Howard, Deane C., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Buford, North Dakota, and will report in person to the commanding officer, Fort Snelling, Minn., for duty at that station.

Promotions.

Wales, Philip G., and Ten Eyck, Benjamin L., First Lieutenants and Assistant Surgeons, to be Assistant Surgeons, with the rank of Captain, June 7, 1894, after five years' service, in conformity with the act of June 23, 1874.

Society Meetings for the Coming Week:

Monday, *June 25th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *June 26th:* Buffalo Obstetrical Society; Medical Societies of the Counties of Essex (annual—Elizabethtown) and Lewis (annual), N. Y.

Wednesday, *June 27th:* New York Pathological Society; Metropolitan Medical Society, New York (private); Medical Society of the County of Albany, N. Y.; Auburn, N. Y., City Medical Association; Berkshire, Mass., Medical Society (Pittsfield); Philadelphia County Medical Society.

Thursday, *June 28th:* Medical Society of the State of New Jersey (first day—Lake Hopatcong); New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society.

Friday, *June 29th:* Medical Society of the State of New Jersey (second day).

Letters to the Editor.

THE CRAZE FOR PHOTOGRAPHY IN MEDICAL ILLUSTRATION.

Galveston, Texas, *June 15, 1894.*

To the Editor of the New York Medical Journal:

Sir: The letter of "Medicus" and your leader on this topic in your issue of June 9th were well timed. Undoubtedly some modern works and many articles on gynæcology are illustrated by photographs which expose the person quite unnecessarily, and therefore indecently, and which coming before the eyes of the laity are not calculated to raise the public estimation of professional delicacy. Especially objectionable are the photographs of nude women in innumerable modifications of the dorsal, dorso-lateral, and Trendelenburg positions which have lately become fashionable. These photographs teach nothing that could not be equally well or better taught by a good diagram; nor is it possible to demonstrate the necessity of the absolute lack of drapery and reproduction of the model's features. Let us have no prudery in medicine or in our daily life, but let us also be doubly circumspect lest we err on the other side.

But there is another view of the matter hinted at in your leader which writers, editors, and publishers would do well to consider carefully. The excellence and cheapness of the recent methods of reproducing photographs by photo-engravings has driven the majority of medical illustrators photo-mad. How many text-books and articles are spoiled by beautiful photo-engravings which teach absolutely nothing, where simple diagrams would have been most instructive!

Take, first, the whole series of photographs of microscopic slides. What is to be learned from any one of them compared with a careful line engraving or water-color sketch of the same object? Who has not been profoundly disappointed with his own results, which he has nevertheless published. There is not one per cent. of the micro-photographs published that are intelligible to any one except the possessor of slide and photograph who can carefully compare the two. Yet a very little training of our laboratory students in histology will enable a considerable proportion of them to produce a diagram quite intelligible to any one accustomed to microscopic work.

Passing to the naked-eye specimen, how often is the very point of most importance in the illustration completely obscured by the photograph!

The possessor of specimen and photograph is not a fair judge. It is comparatively easy, after comparing the two, to make out the points in the photograph, when the latter may be quite unintelligible to the reader. How many published photographs teach us nothing except that the surgeon had a specimen and photographed it! It was round, or oval, or irregular, and covered by adhesions. We could have believed all that without seeing the photograph. But it is not the multiplicity of photographs that we are suffering from; we can look at them or not as we prefer; but they are depriving us of diagrams that might have taught us something. Of all photographs the anatomical one is most disappointing. There is no anatomical point that can not be illustrated efficiently by the simplest diagram, and no amount of photography will enable a man without a practical anatomical training acquired by his own scalpel in the dissecting room to appreciate any anatomical point whatever.

I have no hesitation in saying that the diagrams in Gray's *Anatomy* teach more than the elaborate engravings in Morris's *Anatomy* of museum specimens of dissection in London, and had these engravings been photographs they would have taught nothing at all. Even an *artistically* correct engraving often fails in showing too much and neglecting to emphasize what is important. Those who have employed artists to paint their specimens know how closely they must be watched by the educated eye; and every medical artist knows how artistic effect must be sacrificed to scientific accuracy or even to that little touch of exaggeration or diagrammatic simplification which is constantly necessary to make the drawing tell its story.

That there is a most important field for photography in medicine no one will deny; that medical photographs are, in nine cases out of ten, almost entire failures or teach ever so much less than a simple diagram would have taught, every one will admit. Let us, then, endeavor to give it its due place; to employ the photograph, the simple diagram, or the careful drawing in colors, or black and white, as each shall best illustrate the matter in hand. If the teachers of every large medical institution would club their work together so that they might employ a young physician with a thorough art training (a physician that he might understand what he was expected to reproduce, an artist that he might be able to represent what was visible to his educated eye), a new post might be created which would be a valuable prize to talent in each such teaching center, and our books and magazines would be enriched with much benefit to the world of medical readers.

William Keiller, M. D.

THE MATTER OF GONORRHŒA INSONTIUM.

Red Lodge, Mont., *June 7, 1894.*

To the Editor of the New York Medical Journal:

Sir: Dr. A. Lapthorn Smith's letter in your issue of June 2d, on Gonorrhœa without Coitus, recalled an unusual case of gonorrhœa which I had recently discharged, and an account of which I thought might be interesting.

I was called to see a little boy twelve years of age, with whose penis something was wrong. Upon examining that organ, I found a condition resembling paraphimosis. The prepuce was drawn back over the glans and was very much swelled. The skin of the prepuce was stretched to such a degree that it was almost transparent. The child told me that his prepuce was not naturally tight, and that it usually slipped backward and forward over the glans without any difficulty. I could not replace the foreskin in its natural position, and, as the glans did not seem to be much constricted, I did not try very hard to replace it. Among other things I noticed a drop of pus at the orifice of the urethra, and the patient said the act of urinating had been very painful for several days, although there had been no pus till the day on which I saw him.

Sending all the other members of the family out of the room, I questioned the boy closely as to what he had been doing. He seemed to be such a child, being even smaller than his age would indicate, that I did not persevere very long in trying to get him to confess that he had been indulging in sexual intercourse, yet I commenced treating him for gonorrhœa. I did not tell the parents what my diagnosis was, but as they were frightened, I had no difficulty in keeping the boy in bed.

Of course no injections were used at this stage, yet in a few days the boy had typical orchitis in the left testicle. Evasion of the parents' questions was becoming difficult, yet I knew they would not believe my diagnosis to be correct, unless I could get a further confession from the boy. Again I sent every one except the patient out of the sick-room, and, putting my questions into words which every boy can understand, I asked him if he had ever had sexual intercourse with any one. He assured me that he never had. I then assured him that I knew he was lying, and that he might as well tell me the truth, whereupon he confessed that he had had intercourse with a little schoolmate about ten years old. Upon further questioning, I learned that he had been carrying on a liaison not only with this little girl, but also with another of about the same age. He repeatedly denied having had anything to do with any one else, which denials I did not believe; but I had learned enough, and I gave the parents my diagnosis, which, under the circumstances, they did not question.

The boy made a prompt recovery, but this case taught me that a person is extremely young who is too young and too innocent to acquire gonorrhœa in "the good old way."

A. C. McClanahan, M. D.

AN IMPOSTOR.

Albany, N. Y., *June 13, 1894.*

To the Editor of the New York Medical Journal:

Sir: During the last fortnight I have received inquiries from physicians in Lambertville, Keyport, and Perth Amboy, N. J., concerning a young man who has lost his left hand and professes to have been a student in the Albany Medical College. He gives the name of George, with different given names in different places, and is soliciting aid from physicians and druggists under various pretexts. I am informed that he exhibits a letter of recommendation purporting to have been given him by me, and I beg to say that I know of no such man and that we have never had a student answering to his description. By publishing this note you may prevent physicians from being further imposed upon.

Willis G. Tucker, M. D.,
Registrar, Albany Medical College.

Proceedings of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Third Triennial Meeting, held in Washington on Tuesday, Wednesday, Thursday, and Friday, May 29, 30, and 31, and June 1, 1894.

The President, Dr. Alfred L. Loomis, of New York, in the Chair.

(Concluded from page 758.)

The Surgery of the Accessory Sinuses.—In the first part of the fourth day's session, under the direction of the American Laryngological Association, this was the subject for discussion.

Ethmoidal Disease.—Dr. F. H. Bosworth, of New York, opened the discussion with remarks upon this aspect of it. He said that when dealing with disease in the ethmoidal cells, especially where suppuration had occurred, an opening into each of the large number of small cells was requisite; but, as this was practically impossible, the treatment should consist in breaking down these cells into one large cavity. Ethmoidal disease was the cause of a train of symptoms, such as a watery discharge from the nose, sneezing, neuralgia, asthenopia, and a peculiar condition in which the patient found it impossible to fix his mind on any subject. A very large proportion of cases of supposed acute rhinitis were probably instances of ethmoidal disease. Rhinoscopic examination during the inflammatory stage of the disease would show the middle turbinated body as a rounded mass encroaching upon the middle meatus of the nose. The ethmoidal cells he considered to be part and parcel of the turbinated body. As a general rule, where there was chronic inflammation of a mucous membrane within a closed cavity, the tendency was to abscess formation. A "dropping in the throat" should suggest the possibility of an empyema of the sphenoidal or ethmoidal cells. He did not attach much importance to the use of the probe in diagnosis; he depended chiefly on the appearances observed about the middle turbinated body. He favored the use of the Thudichum douche, one or two gallons of very hot saline water being passed through the nasal cavity at least twice daily. There was no danger of exciting ear trouble by this treatment if the patency of each nostril was tested previously, and if the stream of water was made to enter through whichever naris was found narrowed. After the occurrence of suppuration, the cells should be uncapped by means of a snare, and then with the dental burr they should be broken down into one large cavity. It was often necessary to repeat the operation many times.

The Surgery of the Maxillary Sinuses.—Dr. J. H. Bryan, of Washington, continuing the discussion, said that empyema of the maxillary sinus had formerly been considered to be a condition of rare occurrence, but it was now known to be more frequent. Cysts and other tumors of the antrum had been included in the older descriptions of empyema of this cavity. If there was a carious tooth, and there usually was, it should be extracted. If the cavity was not opened by this method, communication would have to be established by means of a small trephine propelled by a motor. The cavity should be perforated at its most dependent part, and the opening made sufficiently large to admit of the passage of a small metallic drainage-tube. In this way excellent drainage would be secured, and the method allowed of the patient's carrying out a large part of the subsequent local treatment. The objections were that a sound tooth might have to be extracted, and that pathogenic germs or food might pass from the mouth into the cavity, and so infect it. If it was desirable to open the cavity through the nose, then some modification of the Mikulicz method should be adopted. After opening the cavity, it should be frequently washed out with a mild antiseptic solution, and an effort should be made to fill the cavity to its greatest capacity. The simpler and less irritating the application, the more readily would the secretion subside. By an adaptation of the endoscope the speaker had been able to inspect the cavity. Such an examination would often reveal polypi, supernumerary teeth, or necrosed bone as causes of the long persistence of the symptoms.

Benign tumors of the maxillary sinus were usually cysts, polypi, osteomata, or fibromata. Among the malignant growths found here were epithelioma, carcinoma, and sarcoma.

Dr. J. N. Mackenzie, of Baltimore, said that the interest of this discussion centered upon the manner of reaching the interior cavity. There were several ways of opening the antrum, as had been described by the last speaker. Not only was the natural opening to the antrum difficult of access, and the operation painful in spite of the use of cocaine, but the subsequent syringing, which often required to be continued for many months, was disagreeable and painful. It had been proposed to remove the middle turbinated bone as a preliminary step, but this procedure did not seem justifiable so long as other methods were at our disposal. An opening might be made through the inferior meatus just below the normal opening, but it was sometimes attended with quite free hæmorrhage, and the antrum was occasionally so thick at this point that it was impossible to penetrate it with the spear-shaped knife of Mikulicz. He would add that this knife was not so suitable for the operation in any case as the drill. An opening into the antrum through the canine fossa should be attempted only where there were growths in the antrum or where the walls of the antrum were unusually thin. The best way of gaining entrance into the antrum was through a tooth, and the great advantage of this method was that it secured absolutely perfect drainage, while affording a counter-point of drainage through the nose. The tube could easily be plugged if one feared the entrance of food into the cavity, but as a matter of fact food did not generally gain access to the cavity.

Dr. John O. Roe, of Rochester, divided disease of the accessory sinuses into acute and chronic. The chronic form included empyema, mucocele, and other growths. The acute diseases rarely required surgical interference. Empyema of these cavities should be looked upon rather as a symptom than a disease. The successful treatment depended on a correct understanding of the seat of the disease and of its pathology. If the disease was not of long standing, he would usually begin treatment by injections through the natural passage. When catheterism was impossible, an artificial opening should be made through the socket of a carious tooth or, if the tooth was sound, through the zygoma.

The Influence of Infectious Processes on the Nervous System was discussed during the remainder of this session, which was under the direction of the American Neurological Association.

Dr. James J. Putnam, of Boston, discussed the pathology and ætiology. The infectious diseases generally admitted as causes of nervous affections were tetanus, rabies, syphilis, tuberculosis, hysteria, lepra, gonorrhœa, typhoid fever, erysipelas, influenza, mumps, the acute exanthemata, the presence of pyogenic organisms or of the *Diplococcus lanceolatus*, malarial disease, and actinomycosis. The nervous troubles following acute infectious disease were not always due to the primary infection, but sometimes to a secondary infection; or they might be only an indirect result. The more important diseases of the nervous system which had only been suspected of being of infectious origin were poliomyelitis, Landry's disease, certain forms of myositis, neuritis, and myelitis, some of the cerebral palsies of children, chorea, disseminated sclerosis, and other cerebro-spinal scleroses, amputation neuritis, and herpes zoster. Finally, there were various affections following in the wake of infectious processes, but hardly to be classed as indicating the action of a specific virus. Such were the constitutional neuroses and psychoses and the adynamic cerebral affections, the result of œdema or of arterio-sclerosis; various forms of sclerosis of the spinal cord, to which the nervous system was always prone; and subacute forms of multiple neuritis of the ordinary type.

The arguments were strong in favor of the infectious origin of the different forms of the acute myeloneuritis or poliomyositis, which appeared to be due to powerful poisons acting like bacterial toxines. Bacteria had been found in Landry's disease, and myelitis had been produced experimentally by infection with cultures. Acute multiple neuritis might follow almost any one of the infectious processes. The meningitis which followed the exanthemata was probably due to secondary infection. The specific organisms prone under favorable conditions to cause meningitis were often present in even the healthy pharynx. The instances of local bacterial action upon the nervous system were few, while, on the other hand, the nervous system was especially prone to suffer from toxic agents in the blood. Several of them had a strong tendency to attack the vaso-motor system and by disturbing the circulation prevent that normal vascular dilatation so necessary for the protection of the body against the invasion of pathogenic organisms. In tetanus the irritability of the spinal cord was heightened, as in strychnine poisoning; in diphtheria, the cardiac centers were sometimes involved, though gross lesions might be absent; in influenza the tendency of the poison was toward the brain more than in the case of some of the analogous diseases.

In conclusion, the speaker said that in the future much would be gained by directing the line of research into classifying the special liability on the part of the nervous system to disease, independently of infectious processes, and to a refinement of our method of histological and bacteriological research.

The Relation of Infectious Processes to Mental Disease. —Dr. Charles K. Mills, of Philadelphia, in a paper on this subject, said that nearly a century ago Rush had declared that certain cases, such as gout, consumption, pregnancy, and fevers of all kinds, produced madness by acting on the brain in common with the whole body. Regis and Chevalier-Lavaure, in a report to the Congress of French Alienists, in 1893, had distinguished mental disorders (1) due to infectious diseases, (2) due to visceral disturbances, and (3) associated with diathetic maladies. While not denying the origin of mental manifestations and even special types of insanity from other causes—such as traumatism, anæmia, exhaustion, and emotional shock—the speaker said he believed they were sometimes due to the action of infectious and toxic agents, and probably to specific micro-organisms, although the last could not be regarded as absolutely proved. He recalled one case, out of many others in his experience, in which there had been acute delirious mania, with hyperæsthesia, active contractions, and a petechial eruption. The symptoms had been highly suggestive of cerebro-spinal meningitis; but the autopsy had revealed nothing, and the case had apparently been one of toxæmia associated with anæmia. In considering the analogies with nervous affections, not psychoses, or insanities, which were supposed to be of microbic origin, it was only necessary to refer to such diseases as multiple neuritis, some forms of myelitis, and chorea. The teachings of the recent epidemic of influenza were important in this connection.

One of the most valuable contributions to the ætiology and pathogenesis had been furnished by Rasori, who had described in detail a case of acute delirium and given the results of the autopsy and of a careful bacteriological examination. The inoculations with the subdural fluid had led to the development of the same micro-organism, and a series of inoculation experiments on rabbits had demonstrated that this bacillus obtained from the subdural fluid had produced a toxic substance which destroyed the rabbits with symptoms of septicæmia in a short time. Tuke and Woodhead believed that a considerable proportion of cases of puerperal insanity were due to toxic influence without reference to childbirth, and in a series of two hundred cases of eclampsia Olshausen had observed eleven cases of psychoses following eclampsia. It had been alleged that the eclampsia bacillus was the sole cause of puerperal eclampsia, and that this organism was found in no other disease.

The following were the author's conclusions: 1. That specific infection must be included among the causes of the mental symptoms and disease which precede, accompany, or follow febrile and other infectious disorders. 2. That much negative evidence could be adduced in favor of acute delirium or acute mania being due to toxæmia. 3. That analogies with nervous affections known or believed to be of microbic origin favored the view that insanities with similar or related phenomena and lesions were also microbic in origin. 4. That the meager evidence that had been afforded by careful bacteriological investigation of cases of acute insanity had seemed to show that various micro-organisms might induce the same or similar types of mental disease. 5. That the mental disorders of pregnancy and the puerperal state were in a considerable proportion of cases probably toxæmic, without reference primarily to childbirth; but it could not be regarded as proved that a bacillus of either eclampsia or puerperal mania was the sole cause of these affections.

Dr. Francis S. Dercum, of Philadelphia, continued the discussion with some remarks on the therapeutics of the subject. He said that a consideration of the treatment of infectious nervous processes involved not only the treatment of the infection, but also its prevention. From much that we knew we had reason to believe that the occurrence of infection was markedly influenced by the nervous system. The ability to resist infection depended largely on the maintenance of nervous tone. We had also learned that the nerve cells underwent certain changes in the course of their functional activity, and these changes could only be interpreted as those of fatigue. The first problem was the prevention of undue waste of nervous substance from excessive fatigue. The necessity of a proper proportion of sleep and exercise and of suitable food was to be borne in mind as an important element in prophylaxis. There were some doubts about the efficiency of the preventive inoculations practiced by Pasteur, Behring, and others. In regard to treatment, the general indication was to arrest or limit the infectious process and to bring about elimination of the morbid product. To meet the first indication was not as yet possible, but the field of chemistry and of the biological laboratory might in the future yield great discoveries. With the possible exception of tuberculosis and lepra, the symptoms produced by infectious micro-organisms appeared to be due not so much to the germs as to the toxines. In the treatment of tuberculosis of the nervous system Koch's lymph had been shown to be not only useless but dangerous. The same remark applied with almost equal force to the treatment of leprosy. From a consideration of the literature of the subject the speaker was convinced that it was vain to deny the truth of Pasteur's experimental researches on animals, while the evidence regarding human beings in specific instances was strong and convincing. The speaker said that he had collected thirty-four cases of tetanus treated either with Pizzoni's powder or with serum. Of these, twenty cases had been successful, but in some of them other measures, such as amputation or early active treatment of the wound, had been employed. There was no contraindication to the employment of these antitoxines, as it seemed to be in no way injurious.

The other means at our disposal for combating the infectious nervous processes resolved themselves into general remedies, drugs, and surgical procedures. Cold had been applied with varying success. It was not improbable that baths of suitable temperature might prove of service in the treatment of infectious nervous diseases. Whether or not by this means the elimination of toxines would be favored was a matter that at present could only be conjectured. The results of the use of drugs in these diseases had so far been very discouraging. Surgical procedures enabled us occasionally to accomplish definite and brilliant results. This was especially true with regard to the evacuation of pus in positions formerly considered inaccessible, as in brain abscess.

In conclusion, the author offered a suggestion in regard to the treatment of tetanus which he thought might prove of value. It had been observed that the tetanus bacillus while growing in thymus infusion did not develop spores, and that animals subjected to such cultures were highly proof against the cultures grown in other media. If thymus juice possessed such remarkable properties, it should be tested with a view to its possible therapeutic effect. Its administration beneath the skin in a case of tetanus would certainly do no harm, and might do good, and it might also be administered by the mouth. If successful, it would prove far more valuable than the antitoxine, because it was so readily procured.

SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

Meeting of April 4, 1894.

The President, Dr. FREDERICK HOLME WIGGIN, in the Chair.

(*Concluded from page 633.*)

An Osteosarcoma involving an Anterior Cranial Fossa, and an Epithelioma of the Larynx.—Dr. CHARLES PHELPS read a paper with this title. (See page 775.)

Dr. J. W. S. GOULEY said that he fully indorsed what the author had said on the subject of the early extirpation of tumors. He would refer to a case of villous tumor of the larynx which he had removed in 1867 from a child six years of age. It had been, of course, regarded as a benign tumor. The patient was still alive and in good health. Two other cases in later life had been operated upon by a surgical friend and had proved to be malignant, and the patients had died soon after. In the case of the child referred to, he believed that had the tumor been less slow in growth, so as not to have obstructed the breathing, it would in time have become malignant.

He had examined the tumor in Dr. Phelps's case with great care and interest. Certain transverse sections of the projections of the villi had shown a beautiful ingrowth of the epithelium; but in other transverse sections there had been fibrous tissue, and an absence of malignant transformation. In talking over the case with Dr. Dunham, he had found that they agreed in the opinion that the change had probably not begun until about four months before the operation. This had shown that if a tumor were appreciable to the eye and accessible to operation, the sooner it was removed the better.

Traumatic Aneurysm of the Dorsal Artery of the Right Foot.—Dr. J. W. S. GOULEY read a paper with this title. (See page 777.)

Dr. J. A. WYETH said that the surgical treatment of aneurysm was a vast subject. With the additional light of modern surgery, particularly with the aid given us by catgut, a clean excision of an aneurysm of the arm, hand, or some parts of the shoulder and neck, was the ideal treatment. It seemed to him that in Dr. Gouley's case nothing else could have been done, for deligation and the formation of an organized clot would have for years prevented the patient from wearing an ordinary covering for the foot. It seemed also that if by the use of a tourniquet it had been possible to make a clean dissection of the aneurysmal tumor, this would have been better. He had never seen a case of aneurysm of the dorsal artery of the foot—in fact he did not remember to have seen an aneurysm of any of the arteries of the foot or ankle. Aneurysms of the popliteal space had been treated by excision. Recently his assistant, Dr. Van Arsdale, had excised such an aneurysm. The case had been sadly instructive, inasmuch as gangrene had supervened, and the patient had succumbed to the gangrene. This had taught him that if he had to operate upon an aneurysm in this space he would be very careful in determining whether he would treat it by deligation on the cardiac side, or by compression, or by position; he certainly would be careful about dissecting out an aneurysm in this place, for it was well known that there was very little collateral circulation to rely upon, and there were several articular branches destroyed by such dissection. Simple deligation might cause the formation of a clot, and yet not completely interrupt the circulation through these articular arteries. In the case just referred to, he thought that gangrene had been due to a too wide dissection, thus interfering with these important vessels. In the thigh, he saw no necessity for complete extirpation of the aneurysmal sac unless the tumor was so large that it interfered with the function of the limb. In the upper extremity, he had seen aneurysm of the radial artery, and here, as he had said, the ideal treatment was excision. In the forearm, the arm, the shoulder, the axilla, and in aneurysms of the subclavian artery, this operation had been done. It was indicated in aneurysms of the subclavian and axillary arteries where there had been much organization of fibrin within the aneurysm, and where there was considerable pressure exerted on the axillary plexus or the brachial plexus. Recently Dr. McBurney had performed an extensive dissection and removed such an aneurysm of the subclavian artery. Such extensive dissection could not always be done, and was not always necessary. He had once treated an aneurysm of the internal carotid artery which had extended from the entrance of this vessel into the petrous portion of the temporal bone down near to the common carotid artery. He had tied the common carotid and then the external carotid below the origin of the facial, leaving only the superior thyreoid, which he had deligated, thus completely cutting off the circulation through the internal carotid artery. This had been done some ten or twelve years ago, and on examining the case a few days ago, he had found that the tumor had entirely disappeared.

There were special aneurysms about the root of the neck and arch of the aorta in which this operation was contraindicated. These aneurysms were very formidable, and all sorts of devices had to be resorted to to secure proper coagulation. He had tied the subclavian and carotid arteries in several instances on the distal side of these aneurysms. There was no doubt but that the distal deligation after the method of Wardrop and Brasdor did have a solidifying effect on the aneurysmal tumor, but it did not follow in all cases. In a case occurring in his practice within the last two years, he had carried out the suggestion of Macewen, of Glasgow, with a very happy result. A young sailor with a specific history had come to him with a large aneurysm of the ascending arch of the aorta. It had appeared on percussion to be of the size of the two fists. It had pushed the clavicle upward, projecting two inches beyond the level of the chest, and had cut two or three ribs in two, so that the sac had appeared to be about a quarter of an inch below the skin. The man had been almost moribund when seen. He had been given large doses of iodide of potassium, but his condition had been so grave that this treatment had been too slow. A number of harelip pins three or four inches in length had been boiled, and then the sac had been filled with these pins just as if it had been a pincushion. A still longer needle had been boiled in the same way, and had been thrust into the sac, and had been used to tease the coagulum within the sac by scratching the walls of the aneurysm. The other pins had been left in for eighteen hours. Within forty-eight hours the tumor had been found to be decidedly less elastic. A week later this procedure had been repeated. The man had eventually recovered, and had been up to two months ago engaged at his old occupation of a carriage painter.

The speaker said he had never treated any aneurysms by incision into the sac, but he would always be afraid of suppuration in these conditions.

Dr. PHELPS said that if he had understood the author and the last speaker correctly, he thought they were speaking of different subjects—the reader of the paper on traumatic aneurysm and the last speaker on idiopathic aneurysm. In traumatic aneurysms he would say that it seemed to him that the artery should be tied above and below the aneurysm, and as closely as possible to it, and he knew of no way of getting closer to it than to go into it; having done this, he saw no objection to removing it. This remark, of course, did not apply to idiopathic aneurysms.

Dr. Parker Syms said that he, too, thought we should make a careful distinction between traumatic, idiopathic, and diffuse aneurysms, and also as to their situation. In traumatic and diffuse aneurysms the treatment by incision and dissection of the sac as far as possible was the best. He had treated three cases of diffuse aneurysm in this way—two of the femoral artery and one of the lower portion of the popliteal artery. One of the femoral aneurysms had been directly due to a fall; the other had been apparently an idiopathic aneurysm superinduced by resting heavy weights upon the upper part of the thigh. In these aneurysms the pulsation had ceased and the aneurysm had rapidly increased in size. In one case the clot after removal had weighed three pounds. He thought that his cases demonstrated that it was not necessary to tie the distal end of the artery. Owing to the fact already stated that in the popliteal space the collateral circulation was poor, he had probably made a mistake in his third case in ligating the artery near the site of the aneurysmal tumor. This patient had died of sloughing into the popliteal space and secondary hæmorrhage. Certainly where an aneurysm was in such a position that it could be readily dissected out, it should be so treated even if it were an idiopathic aneurysm. Deligation only resulted in the formation of a hæmatoma, which often subsequently caused a good deal of trouble. Treatment by compression did not seem to him to be any safer or better than the other methods. The speaker recalled a case of popliteal aneurysm seen in Bellevue Hospital in 1879 which had been treated by compression. The patient had died of gangrene after consolidation had taken place.

Dr. Lucius W. Hotchkiss said that he had presented to the society two or three years previously a traumatic aneurysm of the palmar arch which he had removed complete. This seemed to him the ideal method in the treatment of small aneurysms of the extremities.

With reference to the rarity of idiopathic aneurysms of the dorsalis pedis artery, he said that Dr. Gouley would probably be interested to know that he had last winter in the Colored Hospital seen one such case of idiopathic aneurysm.

Dr. Gouley said that he had made the statement in his paper that diffuse aneurysms demanded incision at least, because a diffuse aneurysm, according to the experience of many observers, was bound to become a huge abscess. It should be laid open and cleansed just like an abscess. If possible, it should also be excised. John Bell had been really the first to formulate this statement. It should be incised not because it was an aneurysm, but because it was a dead aneurysm, and it should be dealt with as if it were a foreign body. He would not be willing to advise excision of a diffuse popliteal aneurysm, but he would certainly incise it. The chances were that the distal end in this case would be plugged. The proximal end should be tied, and there was little chance of bleeding from the branches given off by the artery where it had become dilated; in fact, the earlier surgeons who treated traumatic aneurysms by incision did not tie the vessel; they plugged the end of the vessel with paper pulp rendered aseptic with alcohol or other substances. Mr. Syme had not cut into that huge axillary aneurysm as a primary object; he had only made an opening sufficiently large to enable him to introduce and plug the subclavian artery with his finger. A ligature had been then applied, and the aneurysm had been laid freely open. It had been as bold a procedure as it had been a brilliant success.

The speaker said that he did not think it was necessary or expedient to lay open every idiopathic aneurysm; where there was much disease of the artery he would prefer to treat it by compression, or else by a very distant ligature.

His object in the paper had been to call attention to the great importance of freely laying open diffuse, dead aneurysms.

Reports on the Progress of Medicine.

OTOLOGY.

By CHARLES STEDMAN BULL, M. D.

Osteoma of the Mastoid.—Green (*Arch. of Otol.*, xxii, 3) reports two cases of this rare anomaly. They both presented appearances entirely different from the ordinary exostoses and hyperostoses. The tumors lay just within the orifice of the meatus and evidently arose from its posterior wall. On superficial examination they appeared firmly attached, but by careful pressure a very slight movement was perceptible. Both proved to be growth of true bone, oblong and covered throughout, except at two minute spots, with tissue—one with cartilage and the other with fibrous tissue. Both were situated in the anterior and outer part of the mastoid, but not attached to that bone, and both were lying in carious cavities. There was no history of earache or otorrhœa for months or years before, but merely the history of deafness of several years' duration, coming on without any symptoms; then for a few weeks gradually increasing pain, discharge, and swelling about the ear. In neither case was the drum membrane perforated, although it was enormously swollen. No sign of any adhesions of the tumors to the bone could be made out.

A Contribution to the Anthropology of the Ear in Criminals.—Daac (*Arch. of Otol.*, xxii, 4) has drawn the following conclusions from his investigations: 1. The length, breadth, and base of the ear increase with age. As the length increases more than the breadth, the physiological index becomes smaller. 2. The three distances from Darwin's tubercle to the base line decrease in age. This decrease must be due to the fact that in age the ear projects farther from the head than in youth, or that the helix margin shrinks with age. 3. Up to the thirtieth or fortieth year the length of the ear decreases as compared with the height of the individual; in other words, the individual grows relatively faster than the ear. From thirty or forty on the ear grows, while the individual becomes smaller. 4. The results are in perfect accord with the measurement of the ears of normal individuals. The size and form of the auricular cartilage vary in the same individual with age. The projection of the ear from the head increases with age. The auricular cartilage of Norwegian criminals seems to be smaller that that of normal Germans, and the ear is smallest in Lappish criminals. There is no type of auricular cartilage which may be considered the "criminal ear."

Contribution to the Microscopic Anatomy of the Human Nasal Cavities, particularly of the Olfactory Mucous Membrane.—Suchannek (*Arch. of Otol.*, xxii, 4) recognizes in the human olfactory mucous membrane, in addition to the supporting fibers, typical olfactory and basal cells. 1. Genuine leucocytes, ninepin-shaped and oval, with hyaline contents. 2. Cells which resemble leucocytes, but which prove to be cellular elements with a pedicle. 3. Transition cells from the pigmented "bell cells," having a small amount of pigmentation and hyaloid contents. He has never seen this form except in cases of diabetes mellitus, and he leaves it an open question whether they are normal or pathological. 4. Distinctly pigmented, round, long, or transversely oval cells, the longitudinal axis being generally parallel to the longitudinal axis of the rest of the epithelial cells. He calls these migratory cells.

An Unusual Case of Bilateral Fracture of the Temporal Bone.—Vulpius (*Arch. of Otol.*, xxii, 4) reports a case of unusual interest in a man who fell a distance of twelve feet, striking on his head. On recovering consciousness, he noticed bleeding from his nose and mouth. For about three weeks he could not walk, and suffered from severe headaches and dizziness. His right eye was closed by a swelling, and there was a wound at the back of the right auricle. There was complete facial paralysis of the right side. There was a loss of taste at the anterior part of the right side of the tongue, which suggested that the fracture of the temporal bone on the right side had probably passed between the origin of the large petrosal nerve and the branching off of the chorda tympani. There was no evidence of any bleeding having taken place from the ear on the mainly affected right side, while on the left there was a blood clot and local marks of ear bleeding, even after some weeks had elapsed.

A Case of Removal of the Stapes.—Bezold (*Arch. of Otol.*, xxii, 4) reports the case of a woman, aged forty-eight years, who had suffered from deafness for a year with constant tinnitus. In both ears there was a perforation of the drum membrane with purulent discharge. The operation for removal of the right stapes was done under cocaine, and at the moment of removal the patient sank on the other side and became pale, but retained consciousness. Excessive giddiness lasted three days. She then complained of tinnitus. The ear remained dry. The result of the operation for the first few days was absolute deafness. After three weeks some hearing returned, but remained always much less than before the operation.

Removal of the Stapes.—Blake (*Arch. of Otol.*, xxii, 4) holds that the operation of removing the stapes does not answer the purpose which might be hoped from it in cases of chronic non-suppurative disease of the middle ear. For this class of cases he advises an exploratory tympanotomy with local anæsthesia only, as preliminary to an operation having in view any form of interference with the middle ear. The exploratory tympanotomy affords an opportunity for a better determination of the condition of the middle ear in a chronic non-suppurative disease than can be determined in any other way. In the great majority of cases of stapes fixation, consequent on chronic non-suppurative disease of the middle ear, the operation was ineffectual so far as the removal of the stapes was concerned, the fixation being such as to result in fracture of the crura instead of the removal of the ossicle entire. In all cases of non-suppurative disease in which the stapes was extracted entire, the hearing was definitely improved in one ear only. The operation of stapedectomy does not afford a promising outlook for this class of cases. In suppurative diseases of the middle ear we have to deal with a different pathological condition; and while the extraction of the stapes has undoubtedly effected a considerable degree of improvement in some of the suppurative cases, it does not follow that equally satisfactory results could not have been obtained by the minor operations effecting a mobilization of the stapes or of the ossicular chain as a whole.

A New, very Efficacious Remedy for Local Infectious Pyogenic Processes in the Ear.—Cozzolino (*Ann. des mal. de l'oreille et du larynx*, November, 1893) recommends the employment of microcidine in suppurative processes in the ear. It is composed of β naphthol and caustic soda, and is inodorous, cheap, and convenient. It appears as an ashy-colored powder, soluble in water in the proportion of one to three and in alcohol, but insoluble in chloroform. By its physical, chemical, and physiological properties and by its alkaline reaction, microcidine neutralizes the irritating products of acid decomposition. Its antiseptic properties rank it next to corrosive sublimate. By its application, suppurative discharges are healed in three or four days, even when the drug is used in strengths of three or four per cent. It does not irritate the tissues.

A Point in the Physiology of the Stapes.—Gellé (*Ann. des mal. de l'oreille et du larynx*, December, 1893) calls attention to the following point: The stapes moves toward the labyrinth whenever the drum membrane is pushed inward, and this movement has been studied and measured. Slight, rapid pressure made upon the drum membrane by means of a pear-shaped air bag fitted to the sound ear modifies immediately and profoundly the sensation of a tuning fork vibrating on the skull; and each push or pressure soon causes a weakening of the sound, which regains its intensity when the pressure ceases. A series of movements or pressures imprinted upon the conducting apparatus and transmitted from the drum membrane to the base of the stapes are therefore the cause of a temporary diminution in the sonorousness of the sound. Here we have a delicate function of protection, and the instrument which gathers the sound possesses the power of weakening the intensity to a certain extent. At the threshold of the labyrinth, that portion of the sound-conducting apparatus diminishes its intensity. Some pathological conditions cause permanent immobility of the base of the stapes, and the principal sign of this immobility is the impossibility of modifying the sensation of the tuning fork in vibration at the apex by centripetal pressure. The so-called "dampers" of the ear are many, and the central nervous system contributes as much to them as does the peripheral apparatus for the reception and transmission of the waves of sound. The two organs operate together for the purpose of protection.

New Method of Treatment of Abscess of the External Auditory Canal by Intubation.—Courtade (*Ann. des mal. de l'oreille et du larynx*, December, 1893) defines the term "intubation" as used here as the introduction of a rubber tube into the canal, to serve both as a drain and as a permanent dilator. He uses it in the treatment of abscess of the external auditory canal, and in membranous obstruction of the canal. After the tube has remained in the canal for several days and sufficient dilatation has been produced, the tube may be removed and the canal tamponed with iodoform gauze. This maintains the canal in an aseptic condition and each time the gauze is removed the canal can be irrigated with a solution of camphorated salol.

The Bony Prominence of the Auriculo-facial Region of the Ear.—Gellé (*Ann. des mal. de l'oreille et du larynx*, January, 1894) draws the following conclusions from his observations: 1. The tympanic cavity and the mastoid cells are separated incompletely above, totally below for the lower two thirds, by a compact, bony lamella, which forms the posterior wall both of the external auditory canal and of the drum. Both these cavities may be filled simultaneously, but they can be emptied independently of each other. 2. Considering the pathogenetic importance of this bony partition, the name "bony prominence of the facial" aptly characterizes it. 3. The Falloppian canal traverses this prominence from above downward and from within outward, and is divided into three portions: an intratympanic portion, a tympanic portion, and a mastoid or extratympanic portion. 4. The point of intersection of the canal with the posterior border of the tympanic ring corresponds to the main horizontal diameter of the drumhead. At this level the facial is situated at two to three millimetres from the surface of the auditory canal. 5. In its extratympanic course the

Falloppian canal runs along the posterior wall of the auditory canal, from two to four millimetres from its surface. 6. The thickness of the osseous lamella which forms the posterior walls of the canal and drum is very unequal. 7. A section perpendicular to the temporal surface of the skull, on a level with the auditory canal and toward the posterior border of the tympanic ring, cuts the Falloppian canal and posterior wall of the drum and opens the mastoid hiatus between the antrum posteriorly and the attic anteriorly. 8. By opening the bottom of the auditory canal through the supero-posterior wall three millimetres behind this proposed line of section, we reach the mastoid antrum without touching the facial. 9. By opening the canal in front of this proposed line of section, at four or five millimetres above the tympanic ring, we come down upon the wall of the cell of the ossicles and open the attic. 10. The margin of the mastoid antrum is six to eight millimetres behind this line, and on the other side is the lateral sinus. 11. The opening of the antrum must be made through the mastoid, if it is to be of any service. 12. The opening of the attic is facilitated by the guidance of this proposed line of section, and in front of it the superior wall should be removed for a distance of five millimetres from the tympanic ring. 13. The presence of this bony partition wall, incomplete above, aids in the formation of a close pathological connection between the drum, the mastoid cells, and the antrum, while it aids largely in separating them from each other, when it comes to a question of local treatment by irrigation, drainage, and disinfecting applications. The canal drains especially the tympanic cavity. The obstacle is this bony facial prominence, which can not be avoided in its tympanic portion. Hence the necessity of creating a special artificial channel by which to drain and treat the cavities behind it. Hence the retention of pus, caries, osseous fistulæ, sequestra from this projection, and lasting otorrhœa, with its complications of grave facial paralysis and trifacial neuralgia. 14. Facial paralysis may complicate suppuration of the mastoid without apparent bony lesion either in the canal or posterior wall of the tympanic cavity. 15. The facial is involved in the various lesions of the bony protuberance. 16. Facial paralysis may be observed in otorrhœa accompanying the osseous lesions of the bottom of the canal. Fistulæ of the posterior wall of the canal are frequent, as well as polypi in the fistulous tracts, and the removal of the latter may be followed by facial paralysis. 17. The presence of the facial nerve in this region paralyzes the efforts of the surgeon; but the gravity of the lesions and their complications may often make it necessary to sacrifice the nerve. 18. When sequestra are present, it is better to wait till they are freely movable before attempting their removal. 19. In the operation of curetting the various fungous and osseous surfaces, it is well to touch very lightly on the bony prominence, because of the danger of wounding the facial. 20. In injuries of the skull, the result of falls, with hæmorrhage from the ear and facial paralysis, the lesion may be limited to a crushing of the canal of Falloppius, with compression of the nerve by hæmorrhage, the hearing returning when the canal is reopened, and the paralysis disappearing after the absorption of the blood.

Furunculosis of the External Auditory Canal.—Barret (*Ann. of Ophth. and Otol.*, July, 1893) thinks that the local abstraction of blood by means of one or two leeches applied to the tragus may be of service, though rarely necessary. A brisk purge will effect sufficient depletion, and should be one of the first steps in the treatment. Dry heat, in the form of hot flannels, a hot salt bag, or a hop pillow, applied to the ear, is the best way to relieve pain. The surface of the swelling should be covered with an ointment made of extract of arnica and belladonna, each twenty grains, to the ounce of lanolin. A pledget of cotton is then inserted into the canal as tightly as it can be borne and left there as long as possible. This must be repeated each day until the furuncle has disappeared. Sometimes a ten-per-cent. solution of menthol introduced on cotton pledgets will soon relieve the pain, and new furuncles do not appear. The menthol is considered to arrest the development of the *Staphylococcus pyogenes aureus* and the *Streptococcus pyogenes*.

The Treatment of Chronic Suppuration in the Middle Ear by Removal of Carious Ossicles, Necrosed Bone, and other Obstructions in the Tympanum.—Würdemann (*Ann. of Ophth. and Otol.*, January, 1893) considers that the treatment of chronic suppuration in the middle ear should be on the same lines that govern our procedures for suppuration in other parts of the body. We should endeavor to remove the cause and obtain free drainage. The removal of the carious ossicles, necrosed bone, and other obstructions to free drainage in the attic of the tympanum is very easily done through the canal. Polypi and granulations should be removed wherever found. The operation done through the canal gives seventy per cent. of radical cures, fully half of the remainder being cured by subsequent treatment, and the rest being greatly benefited by the better drainage. This operation has the advantage of destroying but little of the healthy tissues, and in fully fifty per cent. of the cases the hearing is improved; whereas, after the mastoid operation there are but few cases in which the hearing is improved, and many are made worse.

Removal of the Ossicles.—Sheppard (*Ann. of Ophth. and Otol.*, October, 1893) draws the following conclusions from his own observations and the experience of others: 1. Cocaine can be used with advantage as the anæsthetic in a considerable proportion both of suppurative and catarrhal cases. 2. Removal of the malleus alone is not, as a rule, sufficient in either class of cases. 3. Removal of the malleus and incus will cure a large majority of the suppurative cases, and improves hearing in about half the cases. 4. Removal even of all three ossicles will sometimes fail to cure middle-ear suppuration. 5. Removal of the stapes entire gives better results than when the foot-plate is left in place, although a moderate proportion of the latter class show very good results. 6. Reactive inflammation seems as likely to occur in cases of partial excision of the membrana tympani as in total excision with removal of all the ossicles. 7. Unpleasant symptoms, such as severe and prolonged dizziness, vomiting, facial paralysis, and meningeal irritation, occur in about a fourth of the cases. 8. In a majority of cases the tinnitus has remained unchanged.

The Treatment of Tinnitus in Aural Sclerosis.—Seiss (*Ann. of Ophth. and Otol.*, January, 1894) has found oil injections and the direct application of the vapor of menthol to the tubal lining especially useful in tinnitus of catarrhal origin. The oil best suited for the purpose is pure fluid albolene, to which may be added camphor or menthol in the strength of half a grain to two grains per ounce. A full-sized Eustachian catheter, a one-drachm syringe fitting the former on the ground-joint principle, and an ordinary catheter inflation bag adapted to the same, are the instruments required. The catheter is introduced in the ordinary way and firmly fixed in the Eustachian orifice; the syringe is then filled with oil slightly warmed, fitted to the catheter, and its contents forced into the tube; the syringe is then promptly withdrawn and air inflated through the catheter to gently force the oil farther up the tube. The action of the remedy seems to depend on the well-known vascular sedative effect of the medicament used, as well as upon the general mechanical and lubricating action of the oil. Menthol vaporization has been used by the writer with excellent results in stopping tinnitus and other aural symptoms dependent on tubal congestion and inflammation, and he prefers the Dench vapor generator. The bottle is half filled with fresh menthol crystals, the catheter is then passed and fixed in the Eustachian tube, the cone tip adjusted, and the bulb compressed, when the vapor passes through the catheter into the tube and is at once perceived by the patient. To produce a direct effect on the vascular supply of the tympanum, the author has obtained the best results by freezing the mastoid region over the branches of the posterior auricular and stylo-mastoid arteries. For this purpose he uses the tubes of ethyl chloride, which opened and held horizontally, a very fine jet of fluid at once issues from its tip, which is to be directed on the mastoid region until the skin is frozen white over the whole area.

For the operative relief of tinnitus the author employs mobilization of the ossicles, the principle of the Siegle másseur being supplemented by mechanical force, and the ossicles liberated to a greater or less extent. This method has the advantage of perfect safety, comparative painlessness, and can be performed several times upon the same ear without injury. It rarely fails to relieve subjective noises for at least as long a time as the most radical excisions.

On Systematic Procedure in Operations for the Relief of Intracranial Disease Secondary to Ear Suppuration.—Pritchard (*Arch. of Otol.*, xxiii, 1 and 2) lays down the following rules for operating in these cases: 1. First thoroughly open the antrum and explore the mastoid cells. 2. Failing to find sufficient evidence to account for the whole of the symptoms, the wound in the skull should be enlarged backward so as to expose the middle and posterior fossæ above and below the lateral, which should be explored by means of a hypodermic syringe. At the same time subdural abscesses may be carefully looked for. 3. If a clot is found in the sinus, the internal jugular vein should now be tied and the sinus opened and thoroughly cleared of its contents. 4. If there is any suspicion of cerebral or cerebellar abscess, exploratory punctures may be made above and below the sinus, and the pus, if found, evacuated.

Exploration of the mastoid cells and opening the antrum is a matter of prime importance, for if neglected the surgeon is apt to leave untouched the very origin of all the mischief, and if this does not prove fatal to the immediate success of the case, there is always the danger of subsequent infection. In enlarging the wound in the skull Pritchard uses the chisel, mallet, and Hoffman's gouge forceps. If the trephine is employed care should be taken that the trephine opening should be made continuous with the antral opening, so that the intermediate point should not be missed. In this step of the operation the lateral sinus is to be exposed with the dura mater immediately above and below it, and thus access is gained to both the middle and posterior fossæ of the skull. Careful search should be made for collections of pus between the dura mater and the bone, and if any extensive extradural abscess be found the cranial opening must be enlarged. In the event of a thrombus being found in the sinus the point of ligation of the internal jugular vein should be well below any clot that may be felt in the vein itself, and it may be advisable to dissect out a length of the vein. The sinus should be freely opened and the contents thoroughly removed by means of the syringe and sharp spoon, free bleeding from the upper end of the sinus being encouraged.

Purulent Otitis Media leading to Caries of the Temporal Bone; Epimeningeal Abscess and Death, while the Mastoid remained Intact.—Reuling (*Arch. of Otol.*, xxiii, 1 and 2) reports a case of this sort in a man, aged fifty-seven. At the autopsy marked hyperæmia of the whole right side of the brain was found, and, on lifting the right temporal lobe, about two tablespoonfuls of bloody pus were found in the fossa temporalis and along the pyramidal bone. The inner wall of the squamous bone was perforated by many small fissures, which broke down easily and left an irregular, rough-edged hole of six lines long and five lines broad, communicating through the thickness of the squamous bone with an opening of about the same dimensions, and situated directly over the upper wall of the external auditory canal. There was also a pus cavity extending almost an inch horizontally between the diploë of the squamous bone toward the mastoid process, ending blindly without entering the cells. Along the upper ridge of the pyramidal bone was extensive caries. The brain on the right side was very soft and brittle, and the lateral sinus was filled with about twice the usual quantity of serum. There was no abscess in the brain substance and no distinctly formed thrombosis of the sinus.

A Case of Ankylosis of the Stapes and a Case of Nerve Deafness, with Manometric Examinations and Autopsies.—Bezold (*Arch. of Otol.*, xxiii, 1 and 2) compares the clinical histories of these two cases as follows: The first showed the three cardinal symptoms of a marked defect in the motility of the conducting apparatus—viz., negative Rinné, prolonged bone conduction for low tones, and a large defect at the lower end of the scale for air conduction. The second case was functionally the opposite of the first. Only a small portion in the middle register was preserved for air conduction; bone conduction was completely wanting and Rinné in the other ear was positive. The fixation in the conducting apparatus in the first case was due to a bony ankylosis of the foot-plate of the stapes, affecting a considerable portion of the annular ligament. The nerve deafness in the second case was found to be due to atrophy found in the first and second turns of the cochlea. Both cases illustrate the necessity of examining the ear with the continuous tone series and also of comparing the air and bone conduction.

A Case of Primary Tuberculosis of the Mastoid Process.—Knapp (*Arch. of Otol.*, xxiii, 1 and 2) reports a case of this kind in a child, aged five, of scrofulous habit. The child had several large ulcers in various parts of the body, two being in the vicinity of the eyelids. The right mastoid and supra-auricular portions of the temporal bone were swollen, ulcerated, granulating, and discharging fœtid pus. Both auricles, external auditory canals, tympanic membranes, and middle ears were perfectly normal, and the hearing in both ears was unimpaired. Knapp removed extensive pieces of necrosed bone from both orbits, including a portion of the left zygoma. He then made a curved incision one centimetre behind the insertion of the right auricle, four centimetres long, down to the bone, from the zygomatic ridge of the squamous bone through the linea temporalis as far as the tip of the mastoid. The bone was carious and several fistulæ led to the interior. The whole outer table of the mastoid was chiseled away. Its interior and the adjacent part of the squamous bone were a mass of decaying bony tissue, which was broke down and carefully removed with a sharp spoon. All the wounds were washed out with a solution of mercuric bichloride (1 to 5,000) and tamponed with sublimate gauze, and were syringed and dressed daily and healed in a few months.

The Percussion of the Mastoid Process, with the Report of a Recent Case of Diabetic Caries of the Mastoid.—Koerner and von Wild (*Arch. of Otol.*, xxiii, 1 and 2) have concluded from certain investigations that the air contained in the mastoid has no effect on the resonance. The percussion sound depends much more on the resonance of the healthy or diseased bone substance itself. They use a small metal hammer for percussion, which must always be comparative. The striking surface is eight millimetres broad and slightly convex. The handle is sixteen centimetres long and is made of a thin, tapering piece of whalebone. With this hammer, by moderately forcible, even painful percussion over normal bone covered by thin skin, a loud, clear, osseous tone can be obtained. A place is to be chosen on the mastoid: 1. Below the linea temporalis, as this line denotes approximately the upper border of the mastoid. 2. Above the insertion of the tendon of the sterno-cleido-mastoid muscle, because this thickens the covering over the bone. 3. Behind the border of the auricle. 4. In front of the insertion of the hair. Comparative percussion, of course, allows of a conclusion as to the condition of the bone only when the soft parts are unaltered. A one-sided perforation or accumulation of pus within the tympanum has no effect on the percussion note.

In experimenting on the cadaver the skull must be sawed through symmetrically and higher up than usual. A hole is then bored through the dura and tegmen mastoidei, and from this hole other holes are bored out in different directions, thus opening up many cavities. These cavities are then injected with melted paraffin under strong pressure. After the solidification of the injected mass, percussion shows no difference from that which existed before the boring of the holes. It is evident from these experiments that a filling of the air spaces in the mastoid does not affect the resonance, and that, on the contrary, a hollowing out of the bone diminishes the resonance. The authors conclude as follows: By means of Lücke's bone percussion it is possible to recognize a central osteitis of the mastoid at a time when the disease betrays itself by no externally perceptible sign. It is the disease of the bone itself and not the obliteration of its air spaces that alters the resonance.

Miscellany.

The Medical Corps of the Marine-Hospital Service.—In an address recently presented by Surgeon-General Walter Wyman before the Committee on Inter-State and Foreign Commerce of the House of Representatives, on the matter of a bill to establish a bureau of public health in the Department of the Interior, we find the following interesting account of his corps:

"The medical corps of the Marine-Hospital Service, as will be seen by the small blue book before you, consists of a supervising surgeon-general, sixteen surgeons, twenty-six passed assistant surgeons, nineteen assistant surgeons, and ninety-three acting assistant surgeons, making a total of one hundred and fifty-four. The regular corps, that is to say, all of the above excepting the acting assistant surgeons, are appointed by the President after thorough physical and professional examination. The acting assistant surgeons are appointed by the Secretary of the Treasury, on recommendation of the Supervising Surgeon-General, who satisfies himself as to the professional qualifications of the officer. The employment of acting assistant surgeons in times of emergency for temporary service, and the discontinuance of their services when the emergency is over, furnishes an excellent method of increasing or contracting the medical corps as occasion requires.

"The acting assistant surgeons are men who have been long in the service and are trained in Government routine. When newly appointed in emergency they are usually assigned to a marine hospital under the observation of the commanding officer and one of the older assistants, detailed to meet the emergency.

"I have heard that intimations have been made concerning the youth and inexperience of the members of the regular corps, the absurdity of which is shown by a table which I have caused to be prepared giving the age and date of graduation of every officer of the service. From this table it will be seen that the average age of the sixteen surgeons is fifty years, the average age of the twenty-six passed assistant surgeons is thirty-five years, and of the nineteen assistant surgeons, twenty-nine years."

[The medical colleges represented are then enumerated, and the account continues as follows:]

"It will thus be seen that the members of this corps are fairly representative of the medical profession of the country. Many of them, in spite of the fact that they are subject to change of station every four years or oftener, have held and are now holding professorships in the medical colleges of the cities in which they are stationed.

"Concerning the new admissions to the corps, the law requires that they shall be appointed to the grade of assistant surgeon only, and provision is made for subsequent promotion. The examination is held once or twice a year, as occasion requires, and the applicant must pass a very severe test, making an average of eighty per cent. on all branches. The successful candidates are relatively few. For example, this month, out of twenty-nine who appeared for examination, only four made the required grade. These new appointees represent the very best men among the newer graduates of the colleges; but very rarely do they come direct from the medical college, most of them having had hospital or private practice before seeking admission to the corps. Out of the total sixty-one medical officers, fifty-three had hospital practice before entering the service, seven were engaged in private practice, and only two had neither private practice nor hospital practice.

"There are nineteen hospitals owned and operated by the service, and ninety-five additional relief stations, where at contract hospitals seamen are admitted and treated by acting assistant surgeons.

"The officers of the medical corps, just mentioned, are stationed in every important port on the coast, lakes, and rivers and, being trained in the execution of Government business, become valuable agents for the immediate execution of any sanitary measures which may be imposed upon them by telegraph or otherwise from the bureau. It is always possible for the Marine-Hospital Service, in any part of the country, on the shortest notice, to have qualified agents at a place of danger. There is scarcely an officer of the regular corps who has not had actual quarantine experience, and the corps numbers among its members men whose names have become national by reason of their effective service in various epidemics. The corps embraces a number of skilled bacteriologists, also men who have had large practical experience in the treatment of yellow fever and other contagious diseases, men thoroughly acquainted with all the military duties connected with sanitary cordons, detention camps, and with the methods of train and vessel inspections, scientific disinfection, etc. The effectiveness of this corps is the result of special care exercised to secure within it men who, by natural inclination and special education, are fitted for sanitary work, and is also the result of long and active experience.

"The Marine-Hospital Service dates as far back as 1798. It was reorganized and put upon its present basis in 1871. Though established for the purpose of caring for sick and disabled seamen of the merchant marine of the United States, there have been from time to time other responsibilities imposed upon it, growing out of the necessities of other branches of the Government with which it is intimately and necessarily associated. For example, the Revenue-Marine Service, a branch of the Treasury Department, relies upon the Marine-Hospital Service for the physical examination of its officers and men and their professional treatment when sick or disabled. The Life-Saving Service relies upon the Marine-Hospital Service for the physical examination of the keepers and surfmen. Hundreds of rejections of physically unsound men seeking to become surfmen have been made by the officers of the Marine-Hospital Service. The Steamboat-Inspection Service, a most important branch of the Treasury, relies upon the medical officers of the Marine-Hospital Service for a determination as to the ability of the pilots to distinguish signal lights, and large numbers of applicants for pilots' license are annually rejected by the officers of this service on account of color blindness. The Immigration Bureau relies by law upon the Marine-Hospital Service for the medical inspection of immigrants.

"Naturally, too, by reason of the intimate association of the Marine-Hospital Service, through its sailors, with shipping and commerce, the National Government has imposed upon this service the execution of the national quarantine laws, to which reference has already been made. I will only add here that, so far as national quarantine is concerned, the service, by tradition and constant activity, save for a period of four years, is the natural executor of the same. National quarantine received its first executive impulse through the first surgeon-general of the Marine-Hospital Service, Dr. John M. Woodworth, in 1878. Both prior and subsequent to this last date the bureau has controlled, wholly or in part, epidemics of yellow fever and of small-pox; notably yellow fever in 1873, 1876, 1877, 1878, 1882, 1887, 1888, and 1893, the Brunswick epidemic, when it was confined within the cordon on lines established by the service.

"It also took charge of railroad quarantine against small-pox in Canada, in 1885, and at Harris Neck, Ga., in 1891, it stamped out the disease.

"It had complete control of the quarantine measures against yellow fever in Texas in 1882, and in Florida in 1888.

"The Marine-Hospital Service has under its immediate control ten national quarantine stations, equipped with modern appliances for disinfection of vessels, hospitals for the care of the sick, and barracks, where required, for the detention of suspected immigrants.* These stations are so far remote from populous centers as to be seldom visited, but their completeness and the scientific care exercised in isolation of the sick, the surveillance of those suspected and held under observation, the cleansing and disinfection of vessels, has excited the surprise and commendation of the few members of Congress who have visited one or more of said stations. There is a fleet of thirteen vessels connected with these stations, three of them being old vessels turned over from the navy for the purpose of receiving and housing people in quarantine.

"Now, referring to the work done by the Marine-Hospital Service for other branches of the Government—namely, the Revenue Marine, the Life-Saving Service, Steamboat-Inspection Service, and Immigration Service—a return service on the part of these branches of the Government adds to the strength and ability of the Marine-Hospital Service for quarantine work. For example, the Revenue-Cutter Service, under the same secretary as is the Marine-Hospital Service, may be called upon at any time, and frequently is, to assist in quarantine measures through the medium of their fleet of vessels. During the past summer revenue cutters have patrolled the Southern coast in aid of the quarantine cordon around Brunswick. They have carried medical officers and supplies to the Sea Islands, off the coast of South Carolina, in the sanitary work demanded of the Marine-Hospital Service by reason of the great storm. They have furnished vessels for the Marine-Hospital Service repeatedly in New York Harbor, and in fact practically form a fleet subject to demand for service at any time in the aid of quarantine. During the past summer, when it was feared that the immigrant detention camps at Camp Low and at Delaware Breakwater, both under the control of the Marine-Hospital Service, might of necessity be occupied by immigrants held under observation, an arrangement was made with the Revenue-Marine Service for the immediate detail of their enlisted and armed men from the several cutters, to form the necessary guards around these camps, the places of the enlisted men to be supplied by new enlistments on the vessels.

"The Steamboat-Inspection Service, in return for the examination of pilots, furnishes experts to examine the hulls, boilers, and machinery of the vessels which belong to the Marine-Hospital Service.

"The Life-Saving Service, on request of the Supervising Surgeon General of the Marine-Hospital Service, is required by its superintendent to watch carefully for all dunnage and other stuff that might float ashore from infected vessels, thrown overboard before said vessels reach port; to gather up with rakes such material and burn it.

"The presence of medical officers at the immigrant reception stations at the several ports enables the bureau to keep fully informed with regard to immigrants and their baggage, which constitute so large a proportion of the danger in the matter of epidemic importation.

"The operations of the Marine-Hospital Service, independent of quarantine, during the fiscal year ended June 30, 1893, may be summarized as follows: Total number of sailors treated in the hospitals and dispensaries, 53,317; of which number 14,857 were treated in hospital, the remainder being office or dispensary patients. There were 1,353 pilots examined for color blindness, of which 48 were rejected. One thousand and ninety-five surfmen and keepers of the Life-Saving Service were examined, of which number 41 were rejected for physical causes. Two hundred and seventy-nine seamen of the Revenue Marine were examined before shipment as to their physical fitness, and 22 were rejected.

"With regard to funds, the quarantine service is maintained by a yearly appropriation for the ordinary maintenance of the ten national quarantine stations. In addition to this there is what is known as the 'Epidemic Fund,' which is placed at the disposal of the President, to be used under his direction in any manner he sees fit, to prevent the introduction and spread of epidemic diseases. It is from this fund that the expenses of the foreign quarantine and extraordinary precautionary measures in this country have been paid.

"The Marine-Hospital establishment, independent of quarantine, is maintained by a continuing fund derived from the tax on foreign tonnage."

Formic Aldehyde as a Rapid Hardening Reagent for Animal Tissues.—In the *British Medical Journal* for May 26th W. McAdam Eccles, M. B., B. S., F. R. C. S., assistant surgeon to the West London Hospital, says:

"In the busy life of the present day the saving of time in all parts of medical work is of the utmost importance, and this is especially so in regard to microscopic pathology. Too often a portion of tissue, removed either for diagnosis or in the way of treatment, is never thoroughly examined on account of the inordinate length of time which the processes of hardening, cutting, staining, and mounting will require. Fresh sections of tissues are difficult to prepare and often decidedly unsatisfactory. Of the various fluids in use for hardening animal tissues before section, two are commonly employed—namely, alcohol and chromic acid. Absolute alcohol hardens most tissues in some four or five days, but has the great disadvantage of being apt to render them brittle or to harden them very unequally. Methylated spirit will take a fortnight or more to produce a satisfactory result. Chromic acid is generally used as potassium bichromate in solution with some sodium sulphate in the well-known Müller's fluid. Wherever the sulphate penetrates—and it has great power in this direction—the chromic salt will follow and harden the tissue extremely well; but the process requires an inconvenient length of time—in fact, often as long as six weeks, and with many renewals of the reagents. Pure chromic acid, or chromic acid with spirit, hardens in about a week, but again is liable to make the tissue brittle. Perchloride of mercury interferes much with staining, though it hardens rapidly. Thus any reagent which tends to shorten this period of time, and yet produce satisfactory results, is to be welcomed.

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* These stations are located at: Delaware Breakwater; Reedy Island, Delaware River; Cape Charles, Virginia; Blackbeard Island, Sapelo Sound, Georgia; Brunswick, Ga.; Dry Tortugas, Fla.; Ship Island, Gulf of Mexico, off the coast of Mississippi; San Diego, Cal.; Angel Island, San Francisco Bay, California; Port Townsend, Wash.

"Experimenting in some other ways with formic aldehyde, I was much struck by its extremely powerful and rapid hardening effect. I therefore determined to test its action upon tissues, especially very soft varieties of normal and pathological structures, just indeed those most difficult to prepare for section. Normal cerebellum, testis, lung, thymus gland, and ciliated epithelium of the trachea all hardened well in three days when immersed in a twenty-per-cent. solution of the aldehyde, though for the testis and lung a forty-per-cent. strength is the better. None of the tissues became brittle, but all were easily cut after soaking in gum with an ether-freezing microtome, and all stained well with logwood and some with logwood and eosin. None of the cells of the various specimens were altered in shape or character.

"Of pathological tissues, a very soft round-celled sarcoma from the head, an adenoma of the thyreoid gland, and some emphysematous lung were treated with a forty-per-cent. solution, and all were sufficiently firm in forty-eight hours for cutting; and again all the sections took the ordinary stains well. The lung tissue was, however, somewhat brittle. Compact growths, such as scirrhus or renal tissue, require only a ten-per-cent. solution for twenty-four hours.

"I am thus led to think formic aldehyde in forty-per-cent. solution for very soft tissues, in twenty-per-cent. for firmer, and ten-per-cent. for quite firm material, acts as a most rapid and satisfactory hardening reagent. It does not render any tissue brittle in the way spirit does, and in no way prevents a stain acting well on the sections. It is therefore a useful adjunct in pathological and histological work."

Paralysis following Diphtheria of the Genitals only.—In the *Lancet* for May 26th Dr. W. Gayton relates the case of an unusually well developed and nourished girl, four years old, who was admitted to the Northwestern Fever Hospital on October 28, 1893. Her condition was as follows: The skin of the groins, labia, and vulva was excoriated, owing to a very offensive, copious vaginal discharge. The whole of the parts were found to be extremely swollen and covered with a membranous exudation of the true diphtheritic character, which had also crept along the vaginal cavity as far as could be seen. No urine, it was reported, had been passed for two days (?), and the bladder dullness extended a considerable distance above the pubes. As exquisite tenderness was present, preventing any attempt at instrumental interference, the patient was anæsthetized and a catheter passed. Some urine escaped while the patient was under the anæsthetic, and a little was drawn off and showed a trace of albumin. The temperature was 96° F. only, the countenance very pallid, and the pulse feeble and slow. The inflammation of the vulva, it was stated, had existed for a fortnight, but the throat was not, and had not been, previously affected in the slightest degree by membrane. By the frequent application of a perchloride-of-mercury solution, with the administration of iron and brandy and a generous diet, steady improvement ensued, so that by the 19th of the following month the parts were nearly healed and the vaginal discharge had ceased; the albumin, however, continued, and the pulse and temperature kept subnormal. On the 23d marked strabismus was observed, also palate paralysis, with regurgitation of fluids through the nostrils and an irritating noiseless cough. By the 26th the muscles of visual accommodation were impaired, the albumin persisting, slight vaginal discharge returned, but the genitals were quite free from membranous exudation and presented a perfectly healthy appearance. On the 30th the paralysis was more general, the typical apathetic look and bearing being very pronounced. On December 5th there was great difficulty in swallowing, the muscles of deglutition being now involved in the general paresis, with an almost constant impotent cough. Much headache was complained of, there was rapidity of pulse, and there was more albumin, but there was less secretion of urine. Feeding by tube was resorted to, but death took place next day, due, apparently, to the direct toxic action of the diphtheritic poison on the bulbar centers, which, says the author, is unfortunately so apt to occur with those children who become apathetic and have a nasal quality of voice, irregular sighing respiration, loose, almost noiseless, cough, with mucous accumulation and a rapid pulse.

The Treatment of Tapeworm in Children.—In the *Journal des praticiens* for May 26th Dr. Descroizilles relates the case of a girl, twelve years old, who had tapeworm. She complained of pains in the head, and her appetite was capricious. Diarrhœa and constipation alternated, and traces of tapeworm were seen in the stools. The author prescribed eight grains of calomel, and three days later the same quantity of santonica. This was followed by the expulsion of fragments of the tapeworm, thus confirming his diagnosis. Dr. Descroizilles hesitated to interfere directly by a radical treatment, but owing to the persistence of the parents determined, meanwhile, on an immediate intervention, and the following method was employed: 1. For two or three days a special diet, such as fish or vegetable soup, eggs, milk, and a moderate quantity of bread. 2. During the last twenty-four hours nothing but milk. 3. On the day before the attempt at expulsion, toward evening, a laxative enema to be given. A second enema also to be given three hours before the administration of the following remedy: 4. Ethereal extract of male fern, two drachms; calomel, seven grains; peppermint water, two drachms and a half; gum arabic, seventy-five grains; syrup, five drachms; distilled water, a sufficient quantity to make a mixture of two ounces. A tablespoonful to be taken every ten minutes. 5. Several hours later an enema of castor oil, of from six to seven drachms, to be given.

Dr. Descroizilles prefers the ethereal oil of male fern to quince seeds, kousso, pomegranate, and other preparations of male fern. He prefers it also to pelletierine, the action of which is less regular. It is the best remedy for children if it is given in capsules or in gelatin and sugar.

The author is disposed to try a formula given by M. Duhourcau, who combined green ethereal extract of male fern, chloroform, castor oil, and croton oil. The chloroform renders the worm torpid, the extract of male fern is a tæniacide, and the castor oil acts as a purgative. The author thinks it is an ingenious combination which responds to the various indications in the rational treatment of tapeworm.

Chlorine as a Local Stimulant.—At a meeting of the Clinical Society of London held on May 25th, a report of which appears in the *Lancet* for June 2d, Dr. Diver read a paper on the use of chlorine gas in the treatment of chronic ulcers of the leg, founded on the cases of two old women in the lower ranks of life. The gas used was formed by pouring about two drachms of potassium chlorate, with a drachm or more of hydrochloric acid, into a pickle jar or a marmalade jar, the outside of which was covered with brown paper. Then a disc of white paper was introduced, and over the paper a sufficiency of absorbent wool was placed. Then a large cork was fitted to the neck of the jar. The wool, yellowish-green on the surface when first exposed to view, was then placed over the ulcer in each case and quickly covered with gutta-percha tissue. Over this the patient was allowed to employ whatever she had been accustomed to in the way of bandaging or covering. Rest was not enjoined. The gas employed, said Dr. Diver, was probably chiefly chlorine with some peroxide of chlorine. At the time of the beginning of the treatment the first patient had a varicose ulcer on each leg, between the calf and the ankle. Both ulcers improved steadily under the treatment, and in eight weeks the one on the left leg, having been dressed three times a week, was well. This ulcer had not before been healed for twenty-five years, and at the time the treatment was begun it was over two inches long and nearly two inches wide. The ulcer on the other leg had nearly healed, but its progress had been impeded by accidental circumstances. In the second case there was a large ring-shaped ulcer which had followed the bite of a cat some twenty years before. It extended from a little above the ankle nearly to the middle of the calf, and was very deep. It was treated in exactly the same way, and soon its ashy surface showed granulations which went on increasing until, after six weeks' treatment, they reached the level of the skin. Since then the ulcer had maintained its granulations, its extent had been narrowed very considerably, and it was still steadily improving. The patients were shown, together with drawings of the ulcer in the second patient, illustrating its appearance at the time the treatment was begun and subsequently.

The Alumni Associations of Columbia College in the City of New York.—The following circular has been addressed to the members:

The University Council of Columbia College has constituted a Standing Committee on Aid for Students, consisting at present of the following members:

Professor E. R. A. Seligman (Faculty of Political Science), chairman; Professor F. M. Burdick (Faculty of Law); Professor G. S. Huntington (Faculty of Medicine); Professor F. R. Hutton (Faculty of Mines); Professor J. F. Kemp (Faculty of Pure Science); Professor E. D. Perry (Faculties of Arts and Philosophy).

It is the design of the committee to put needy students, especially those coming from elsewhere than New York or the immediate vicinity, in the way of earning enough for their partial or complete support, or if possible to extend assistance to them in other ways, while they are pursuing their studies here. It is believed that many opportunities might be offered to students of this class if the fact of their desire to obtain such employment were generally known. Some of the methods that have been suggested are: private tutoring, translating, copying of various sorts, teaching in evening schools.

We are striving to make New York a real university center in this country, as are Paris in France and Berlin in Germany, and we are already receiving assurances of co-operation from many quarters, both public and private, in this city.

Your co-operation with the work of the committee, by suggestions or in any other way, is earnestly requested and will be most gratefully accepted. Communications may be sent to any member of the committee.

The Employment of Cocaine as an Antigalactic.—In the *Lyon médical* for May 20th Dr. Joire writes that he has observed that cocaine used in cases of painful cracking of the nipple diminishes the lacteal secretion, and that this fact suggested to him the idea of employing it in a regular manner in cases where the patients desired complete suppression of this secretion. The author employs the following solution: Cocaine hydrochloride, seventy-five grains; distilled water, an ounce and a half; glycerin, an ounce and a half. This solution is applied with a soft brush five or six times a day, and suppression of the secretion is obtained in from two to six days. There is never any inconvenience from the use of this solution on account of the surface painted being so limited. Cocaine, by producing anæsthesia of the nipple, hinders its erection, which, according to M. Joire, favors the lacteal secretion.

Rhythmical Tractions on the Tongue in the Treatment of Asphyxia from Hanging.—M. Laborde recently read a paper with this title before the Académie de médecine, the proceedings of which are reported in the *Progrès médical* for May 12th. The author said that, among all the different forms of asphyxia in which this method had been employed successfully, there was one that had not been mentioned, and that was asphyxia from hanging, in which, however, experiments had shown that the procedure was quite favorable. The following case had been observed by M. Luys, and was presented by M. Laborde: A man, thirty-three years old, had been resuscitated by this method after hanging for several minutes, and when all other means had failed. The rhythmical tractions were kept up for at least ten minutes.

A Case of Obstinate Membranous Enteritis.—*La Presse médicale* for May 19th gives the following treatment, which was successfully used in the case of a young woman: 1. Every morning an energetic general friction with a glove saturated with oil of turpentine. 2. Twice a week a hot bath in which a pound of sea salt and nine ounces and a half of sodium carbonate have been dissolved. 3. Each morning, taken slowly, in a recumbent posture, an enema, as hot as possible, of nine ounces and a half of boiled water in which half a drachm of borax has been dissolved. 4. Every day, before the midday meal, nine grains of quinine sulphate. 5. The exclusive use of beer, milk, and Evian water.

The Woman's Medical College of Baltimore.—Dr. Eugene F. Cordell, of Baltimore, informs us that Dr. Charles E. Simon has been appointed professor of physiology and histology; Dr. Charles O'Donovan, professor of diseases of children; Dr. Pearce Kintzing, professor of chemistry; Mr. Ralph Robinson, LL. B., lecturer on medical jurisprudence; Dr. Berwick B. Smith, lecturer on pathology; and Dr. Claribel Cone, lecturer on hygiene. The session is to be lengthened to eight months, and the three-year course has been required for graduation since 1884.

Phosphorus Butter.—The *British Medical Journal* credits M. Comby with the following formula, a modification of Trousseau's, for the preparation of an iodo-phosphorated butter which may be used as a substitute for cod-liver oil in hot weather: Fresh butter, seventeen ounces and a half; potassium iodide, four grains; potassium bromide, fifteen grains; sodium chloride, two drachms; phosphorus, one seventh of a grain. About a third of an ounce is to be taken daily, spread on bread.

An Application for Insect Bites.—The *Presse médicale* gives the following formula: Strong ammonia water, thirty parts; collodion, ten parts; salicylic acid, one part. A drop of the solution to be applied to each bite.

THE NEW YORK MEDICAL JOURNAL, June 30, 1894.

Original Communications.

APPENDICITIS

STRICTLY A SURGICAL LESION.

By JOHN A. WYETH, M. D.

It is not my intention to go into the pathology, symptoms, diagnosis, or operative technique of appendicitis. There is practically nothing to be added to such contributions to the literature of this subject as the paper of Professor William H. Welch in the *Transactions of the Congress of American Physicians and Surgeons*, vol. ii, page 5; The Importance to the Surgeon of Familiarity with the *Bacillus Coli Communis*, by Professor Roswell Park, in *Annals of Surgery* for September, 1893; a classical paper, Observations upon Appendicitis, by Dr. George Ryerson Fowler, in the same paper for January, February, March, and April, 1894; Remarks upon Appendicitis, by Maurice H. Richardson, M. D., in the *American Journal of the Medical Sciences*, January, 1894; Remarks on Appendicitis, by Professor Christian Fenger, in the *American Journal of Obstetrics*, August, 1893; Ueber Aetiologie und Pathogenese der Peritonitis durch Perforation, by Barbacci, in *Centralblatt für allgemeine Pathologie*, 1893; and several practical and excellent articles by the late Professor Sands, and by McBurney, Fitz, Weir, Baruch, Keen, Bull, Bryant, Senn, and others.

Suffice it to say that the danger to life which makes appendicitis strictly a surgical lesion is *peritonitis*, and this may occur not only with, but without perforation. Through any portion of the walls of the appendix, the vitality of which is materially impaired by ulceration or gangrene and yet not perforated, septic micro-organisms or ptomaines from the alimentary canal may pass and thus precipitate septic peritonitis, local or general. That gases also pass through is evident from the peculiar fæcal or intestinal odor imparted to the contents of the abscess or cavity of the peritonæum, when the most careful search shows no perforation is present.

When perforation exists, the septic process is rapid and, unless encapsulated by the accident of peritoneal adhesions, soon induces a fatal termination.

In all the range of the materia medica there is not an agent which can prevent peritoneal infection from a diseased appendix, nor is there an agent which exerts a curative influence over this disease when once established. In the presence of this most grave malady the physician is powerless save in the allaying of pain, the assurance of quiet and the conservation of the patient's strength by proper nourishment. If the disease is mild in type, the inflammatory process limited, and resolution occurs, he congratulates himself, and is to be congratulated for his luck rather than judgment. If perforation and general infection or abscess, or obstruction by adhesions occur, he has recourse to surgery at a time when the hand, which earlier might have interfered for the patient's safety, is often invoked too late.

In my entire experience with this lesion I have yet to see a death which could not properly be ascribed to delay in timely and skillful surgical interference. With all respect to the diagnostician, I do not believe it is within the scope of human judgment to determine from the symptoms whether or not perforation or gangrene is about to occur, whether peritonitis with or without perforation is being circumscribed by adhesion or spreading to general infection. Every surgeon of experience is familiar with such cases. I do not mean to say that by a careful study of the symptoms these conditions may not be made out in a fair proportion of cases, but I do mean to say that, as at present treated by our profession, the rate of mortality is greater than it should be, and I do know from my own experience that prompt surgical treatment will give a better ratio of recovery.

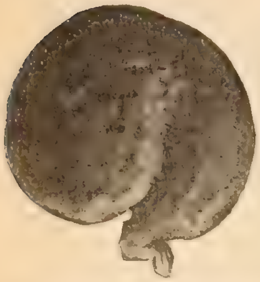
In a short paper based on eleven cases treated in the month of September, 1892, before the Surgical Section of this Academy and in a subsequent report, I maintained this position, and if you will bear with me in a condensed recital of more recent cases I will still further strengthen the conclusion that every case of appendicitis from the first dawn of a symptom of the disease should be treated by a surgeon, with the regular medical attendant.

On February 6, 1894, I was called to Astoria in consultation with Dr. H. O. Fitch and Dr. J. D. Trask. The patient, A. B., aged twenty-one years, was an athletic, robust man, with no previous disease. He had had two or three attacks of "cramps" in the bowel within the last two years, but there was no pain in the right iliac region, no tenderness, or no muscular resistance. The pain in these attacks was felt at the umbilicus and a small dose of morphine had in each instance relieved him, and on no occasion was he kept from his business.

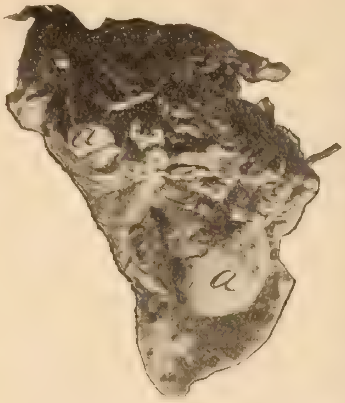
On Monday, February 5th, he had dined heartily in New York city, reached his home by twelve midnight, and retired as well as ever in his life. At 2 A. M. he was awakened by a pain in the right iliac fossa and sent for Dr. Fitch, who saw him at 7 A. M. This time the pain was well marked at the appendix. The temperature was 101·5° F.

I saw the patient at 2.30 P. M. He was lying on his back with the legs in full extension. The temperature was not quite 102° F. There was some muscular resistance which yielded when the muscles were relaxed at will; pain not severe on pressure. He had not vomited and no morphine had been administered. Deep pressure recognized a small resisting body at the location of the appendix. There was not a symptom in the case which might not have excused operative interference with the hope of resolution. Knowing as I did, with such a robust subject, that exploration was not dangerous, and knowing, as I have had sad reasons for remembering, of many cases in which the patient perished from timidity and delay, I advised operation, and Dr. Fitch and Dr. Trask promptly coincided.

The appendix was found greatly distended with soft semisolid ingesta, coiled on itself, as shown in this picture, and deeply mottled in its whole extent and evidently becoming rapidly gangrenous. It was not perforated. I tested this by forcing water into it after removal, and, under pressure, it was impermeable. On the contiguous surfaces of the colon and ileum yellow films of peritoneal lymph with a covering of creamy pus was seen. The first ligature applied to the appendix broke through the gangrenous wall, and the final ligature was tied at the line of the cæcum. I do not give the operative technique, for it is too well known to require repetition here. The recovery was uninterrupted.



The appendix vermiformis coiled on itself, and gangrenous thirteen hours after the first symptoms of appendicitis.



a, a, the appendix imprisoned in a mass of organized lymph.

In this case had operation been delayed, rupture of the appendix was inevitable within a few hours, and there was no chance of encapsulation by adhesions. Death would surely have followed.

It so happened that on the following day I was called to see a boy, five years old, hitherto healthy and robust, who on Sunday, February 4th, had complained of a pain in the stomach. During that night he vomited, had a chill, and at 5 A. M. Monday, high fever. His physician was called and at 9 A. M. found him with temperature of 100°, abdominal muscles resistant, and pain chiefly about the umbilical region. Opium and bismuth were prescribed, and later oil, which moved the bowels. The symptoms increased in severity through that night and on the next day, and on February 7th at 11 A. M., on the fourth day after the onslaught of the appendicitis, I was called to operate. The pulse was rapid and weak; temperature, 103°. Abdomen greatly distended and very painful to pressure. The facies abdominalis was present, and altogether the case seemed hopeless; nevertheless, I opened the abdomen only to find the peritoneal cavity hyperdistended with fœtid pus saturated with intestinal contents. The appendix was ruptured through an ulcerative patch, out of which ingested matter was oozing. This was removed, a second incision made in the median line to facilitate thorough washing out of the cavity with warm boric-acid water, and drainage out of the deepest portion of the pelvis, as well as through the incision over the appendix. The child rallied fairly well. On the day following, obstructions due to paralysis of the intestine from peritonitis caused such distention that an artificial opening was made in the ileum at the wound in the iliac fossa. A large amount of gas and some ingested matter escaped and the distention was relieved. Death occurred on February 10th from septic infection.

These are two illustrative cases. One was saved by prompt operation, the other perished from delay. The death-rate in appendicitis as at present treated is about eighteen in a hundred. Richardson, of Boston, reports one hundred and eighty-one cases, forty-three deaths, or twenty-four per cent. Murphy, of Chicago, one hundred and forty-one cases, sixteen deaths, or eleven per cent. At Mount Sinai Hospital in 1893 there were treated forty-two cases with seven deaths, or 15·5 per cent., this total of three hundred and sixty-four cases giving a mortality ratio of eighteen per cent. I venture to say that if a competent surgeon were called within the first twelve hours from the first symptoms of appendicitis, this death-rate would be brought down to five per cent. or less, and I believe that if every case were properly explored and, if necessary, operated upon within the first twenty-four hours of the first symptom, the death-rate would not be two per cent. In Bull's statistics of three hundred and forty-one cases of chronic relapsing appendicitis the fatal cases were seven—not quite two per cent. Granting his conclusion, that this ratio would be increased to five per cent. if all cases were made public, the conclusion must also be accepted that early operation in acute cases would be made under more favorable conditions and would yield a lower death-rate.

It may be that the surgeon who leads trumps when he is in doubt might open into the abdomen of a certain small proportion of cases in which the appendix was not diseased, but such an error is in the direction of safety. Careful and skillful exploration of the peritoneal cavity is not dangerous. The danger of ventral hernia in the line of incision is insignificant when the incision is properly made and the recumbent posture maintained for six weeks while the wound is firmly uniting.

Again, failure to operate early in the history of an appendicitis invites disaster in other forms than death. Fæcal fistula from the ruptured appendix or from the colon, which breaks down from the pressure of the abscess or inflammatory tumor; adhesions and recurrent attacks of appendicitis, compelling operation under difficult conditions; and intestinal obstruction are of frequent occurrence.

On February 13th, within a few days of the two cases first detailed, I was consulted by F. B. S., thirty years old, who came to me with his physician, Dr. Hancock, of Wisconsin. This patient had acute appendicitis in February, 1893. A large abscess was opened on the ninth day, and one week later fæcal matter escaped and had continued to escape to this date. He was subjected to operation for closure of the fistula. Had this patient been operated on within twenty-four hours of his illness, no such disaster would have followed.

On January 25, 1894, this specimen was removed with considerable difficulty from A. W., of Kinderhook, who was brought to me by Dr. Kittel of that town. He was thirty-one years old, and in June, 1893, had a slight attack of appendicitis; a recurrence in August, lasting for thirteen days; a third seizure in September, and in December a very severe attack which put him to bed for three weeks. At this time there was a well-marked tumor in the iliac fossa and high febrile movement. The appendix was found firmly adherent to the side of the rectum and bladder, the cæcum being greatly displaced and evidently drawn down by the weight of the inflammatory tumor and subsequent contractions. This patient made a good recovery, but he should have been operated upon in the first attack, when the danger and difficulty would have been insignificant.

On March 1st of this year I removed this most instructive specimen from H. T., a man thirty-four years old, brought to me by Dr. Abruzzo and Dr. Bettini, of this city. A well-defined tumor was located in the right iliac fossa. Seven weeks before, he had noticed it after an attack of cramps in the bowels. It was not sensitive to pressure, nor was there any rigidity of the abdominal muscles. The temperature was normal.

He said the tumor was getting larger all the time. On exposing the cæcum it was covered at its end by a tumor composed of organized lymph. Dissecting down to a depth of about three fourths of an inch into the mass, the appendix was found to form the center of the tumor. It showed the traces of an inflammatory process and looked withered up from the pressure of the enveloping lymph which had contracted around it. The tumor, with its appendix, was dissected from the cæcum, and the contiguous ileum and stump buried by inclosing sutures. At this juncture I felt a number of hard foreign bodies in the ileum which at once told me that there was a stricture at or near the ileo-cæcal valve which would allow semi-liquid intestinal contents to pass out but arrested solid matter. I opened the ileum, introduced my index finger into the gut, and found the tip could scarcely be engaged in the opening, which was not more than a fourth of an inch in diameter. By gradual divulsion the finger was forced through to its largest diameter and the wound in the intestine closed by ten Lembert sutures. About two weeks later a lot of orange seeds were discharged through the anus, some of which are shown with the specimen. The patient recovered.

On April 2d this specimen was removed from a lady about thirty-five years old, who eight days before had the first symptom of pain at the appendix. Three months before, she had experienced slight pain in this same region, which persisted mildly for three or four days and went away. In this last attack, however, the pain did not cease, but was not severe. On the fourth day, with a normal temperature, the abdomen began to swell, and for two days before I saw her she was vomiting at frequent intervals, and for twenty-four hours intestinal contents. Recognizing intestinal obstruction, I cut down upon the appendix and found it small—about a fourth of an inch thick, three inches long and perfectly healthy, save at the tip, where a pinhole perforation existed. This had produced a general septic peritonitis and an adhesion of a loop of small intestine, with complete obstruction about four feet from the ileo-cæcal junction. The appendix was tied off and the obstruction relieved. The intestine was gangrenous at the point of occlusion and burst after it was lifted out of the peritoneal cavity. It was closed by suture and the weak spot attached to the margin of the abdominal incision. She died from sepsis thirty-six hours after the operation. If this patient had been operated upon within twenty-four hours of her second attack, she would have escaped the disaster which followed.

These cases are taken as they have come in my practice. They are the common experience of many surgeons and they point unmistakably to the wisdom of early operative interference. Given a surgeon of experience, a clean operator, who, with the minimum of traumatism to the intestines or contiguous viscera, can remove a diseased appendix, and it would be better for exploratory laparotomy to be done in every instance within the first twenty-four hours of the disease.

On the contrary, were I the subject of an attack and were I not sure of my surgeon, I would keep flat on my back, quiet peristalsis and voluntary motion with morphine, and take the chances of resolution, encapsulation by adhesion, or rupture into the intestines. If there is one particular operation an inexperienced man should in all conscience avoid, it is this.

St. John's Riverside Hospital, Yonkers.—The new hospital was dedicated on Thursday, the 28th inst.

THE EPITHELIO-GENETIC ORIGIN OF CARCINOMA.*

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The title which has been chosen for this paper is probably a bad one in that it is ambiguous and may be construed to mean a discussion of the old question, Does carcinoma arise from epithelium alone, or can it also originate from the connective tissues? Almost all pathologists now adhere to the former view, so that a further discussion would be useless. The title intends to convey the idea that carcinoma arises from epithelium by abnormal growth of that tissue, without any parasitic influence, in which sense the carcinoma is epithelio- not protozoo-genetic.

The parasitic theory of carcinoma is not new, yet it is not old, and the majority of the members of this congress have seen its development as the science of bacteriology developed, watched its acme under the feverish enthusiasm of Scheuerlen, Schill, and Kubassoff, and marked its rapid defervescence under the radical treatment of Senger, Baumgarten, and Rosenthal. After this a year passed quietly by, then the theory suffered a relapse in a somewhat modified form at the hands of Malassez, Albarran, Darier, and many others whose conclusions are that carcinoma is a parasitic disease, produced by an animal parasite closely related to the coccidia of the rabbit.

The discussion of this newer theory of the ætiology of carcinoma naturally divides itself into two principal parts:

I. Are animal parasites present in carcinoma?

II. If present, are they of ætiological significance?

I. *Are Animal Parasites present in Carcinoma?*—To do justice to this very important question it seemed necessary to combine a careful review of the literature with my own researches upon the subject, but the prosecution of this idea gave birth to so voluminous a manuscript that all hope of embodying it here was given up and it was separately published (*University Med. Mag.*, September, 1893).

Given very briefly, the history of these animal parasites is as follows: The *Coccidium oviforme* had long been known to infest the liver of the rabbit. Malassez observed similar bodies in the epithelium of Paget's disease. Thoma (*Fortschritte der Med.*, 1889, vii, p. 413) found similar bodies in carcinoma, and these observations were elaborated by Sjöbring (*Fortschritte der Med.*, 1890, viii, p. 529), Foá (*Centrlbl. f. Bakt. u. Parasitenk.*, 1892, vol. ii, No. 6), Podwyssozki (*Centrlbl. f. Bakt. u. Parasitenk.*, 1892, vol. xi, Nos. 16 and 17), Sawtschenko (*ibid.*, 1892, xii, No. 1), Soudakewitch (*Ann. de l'Institut Pasteur*, 1892, vi, pp. 145 and 545), Ruffer and Walker (*Journal of Path. and Bact.*, 1892, vol. i, No. 2), and others, and the described bodies finally pronounced to be protozoa and the cause of carcinoma.

My own observations coincided with those of the preceding investigators in the discovery of the bodies in question, some of which were found in nearly every one of the forty carcinomata which I studied. The bodies called parasites I generally found in the epithelial cells, in one instance in the nucleus, but in all others in the protoplasm. They are spherical or slightly oval in shape, smooth in outline, not infrequently seeming to be surrounded by a double capsule. Sometimes they are homogeneous, sometimes homogeneous containing a more or less distinct nucleus, sometimes are granular throughout. The size varies from an almost imperceptibly small sphere to one so large as to distend the cell and compromise the shape of the nucleus by the pressure exerted. The majority are very uniform, however, being of about two to two times and a half the size of the nuclei of the epithelial cells. The separation between the inclosed body and the protoplasm is always sharp, and sometimes a space exists between the surface of the inclosure and the cavity in the protoplasm as if the foreign body occupied a vacuole. When nuclei are present they are a trifle indistinct in outline, sometimes appearing simply as a collection of granules near the center of an otherwise homogeneous body. Occasionally forms were found in which the granules arranged themselves in a cruciform figure; again, others in which, instead of the crosses and stars being made up of granules, they were caused by the absence of granules which had collected elsewhere in the cell. In none of the bodies were radiations observed.

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* Read before the First Pan-American Medical Congress.

Methods of staining, upon which so much emphasis has been placed, seem to be variable and unreliable in action. The best results were secured with hæmatoxylon and eosin, the granules and nuclei taking on a bluish tinge, while the homogeneous material tinges very slightly with the eosin. Biondi's method is less constant, and in my hands less clear in its results, and after a few trials I rejected it.

The best results very naturally accrue from the best methods of preservation, probably for no other reason than that the cells are all better preserved. The bodies, however, are distinctly visible in specimens preserved in Müller's fluid, alcohol, or other common preservatives.

The epithelial cells occupied by the bodies are not normal in other respects, but generally have distorted, shrunken nuclei and often a vacuolated protoplasm. Walker and Plimmer (*Journal of Path. and Bact.*, 1893, vol. i, No. 4), who see these bodies originate in the nuclei, escape into the protoplasm, and develop there, also see great regenerative powers in the nuclei, which rapidly heal and appear normal. My observations differ from these.

Upon the appearances presented by the bodies observers are nearly all in accord, but the inferences drawn from these data differ most widely.

What are these seemingly cellular entities so common in cancer cells? Our judgment upon this matter can not be too conservative, and in forming it we must clearly understand the reasons given for regarding the bodies as parasites.

The first reason given is a diagnosis by exclusion. If the bodies are not parasites, what are they? To answer affirmatively is by no means a necessary sequence, for there are many things of which we are ignorant, perhaps more in pathology than elsewhere, and not to know what the things are does not make them parasites.

The second argument is the supposed homology between these so-called parasites and the coccidia of the rabbit. Now, when this homology is submitted to a careful analysis, it proves to be no homology at all. It is not morphological, for between these spherical homogeneous cellular inclosures and the large oval *Coccidium oviforme* there is not a particle of resemblance. It is not developmental, for we know of the *Coccidium oviforme* that, when it is removed from the body and subjected to proper temperature and moisture, the oval cells divide into four smaller cells, each of which contains delicate falciform embryos, and that these, when taken into the body in food or water, protected by the surrounding capsule, pass through the stomach and escape into the intestine, where the capsule dissolves and allows the amœboid embryos to enter the intestinal and biliary epithelium. Of the organisms found in cancer no such cycle has been seen. Neither is the homology pathological, for the changes in the liver produced by the coccidia are in no way similar to cancer. The lesion produced by these organisms seems entirely the result of a chronic inflammation of the bile ducts, and the irregular epithelial growth that results is more like the harmless tumor known as *adenocystoma papilliferum* than like cancer. In the absence of any real morphological, embryological, and pathological resemblances between these cellular inclosures and the coccidia, we find the absence of all scientific grounds for the assumption that we are dealing with positive, independent, animal bodies.

The arguments against the parasitic nature of the inclosures are, however, much more weighty, for no one has succeeded in finding similar bodies elsewhere than in cancer cells; no one has succeeded in cultivating them outside of their customary environment, or observing their growth in that environment. They do not reproduce themselves when inoculated into animals, nor do they in any way exhibit any manifestations that could not be otherwise accounted for than by the assumption that they are animals.

But, if they are not parasites, what are they? Every investigator who describes these things is careful to tell us how to distinguish between them and leucocytes; hence sees a distinct resemblance between them. The distinguishing feature given for this differentiation is almost invariably some staining reaction, and no less reliable method could be employed, for we all know how the health or degeneration of a cell causes its staining capacity to vary. My belief is that, instead of parasitic animal forms, we have to deal with a variety of things, of which leucocytes are among the most important. We all know how common leucocytes are in cancer, and all of us have perceived leucocytes, sometimes numbers of them, within the epithelial cells. If there be any truth in the doctrine of phagocytosis, it is natural that one or the other cell will suffer from this relationship. That epithelial cells are phagocytic can scarcely be doubted by those who have examined cases of brown induration of the lungs or catarrhal pneumonia. If the epithelial cells of carcinoma are phagocytic, it is natural that the smaller leucocytes shall be digested, and, if this takes place, what a variety of appearances partially digested leucocytes may present we can scarcely guess.

I believe that many of the so-called parasites are nothing more than partially digested leucocytes; others, of the homogeneous type, I conceive to be the result of the globular hyaline degeneration; while still others, together with what some have described as "empty capsules," must be regarded as simple vacuoles.

But, and this is the exception which makes a second part of this paper necessary, there have been described by Soudakewitch and Pfeiffer (*Die Protozoa als Krankheitserreger*) certain forms so unlike the bodies which we have had under consideration, so unlike anything belonging to the human body, so much like the *Gregarinidæ*, so peculiar in their radiate structure and seemingly amœboid powers, that we can not but admit the possibility of the very rare occurrence of true protozoa in carcinoma. These bodies are large, and seem as frequently to lie between the cells as within them, and while even of these exceedingly rare forms nothing has been proved, yet their homologies of form are sufficient guarantee for us to consider them true animal forms, if for no other purpose than to stimulate a study of their ætiological importance.

II. *If Animal Parasites are present in Carcinoma, are they of Ætiological Significance?*—This question includes a second question of great importance. Is cancer an infectious disease? Much has been written upon this subject, and an attempt to refute each argument advanced would consume so much time and space that I shall suggest but three topics for discussion under this head.

a. Cancer can not be Transmitted from Individual to Individual by Inoculation.—This is the most forcible argument which can be advanced against the micro-organismal nature of the disease.

In 1840 Langenbeck (*Schmidt's Jahrbücher*, vol. xxv, p. 104) made a mixture of carcinomatous tissue and dog's serum, injecting the same into the vein of a dog. This dog subsequently developed carcinomatous nodules in the lung. The experiment seemed like a brilliant success, but Virchow (*Krankhaften Geschwülste*, Bd. i, p. 87) tells us that he examined the microscopic specimens of these tumors, and found "more the appearances of that form of spontaneous cancer which he had, himself, found in dogs than that of cancer elements as found in men." From this we may conclude that much doubt must be placed upon the results of Langenbeck's work.

Alibert, it is said, inoculated himself and his pupils with cancer juices, but produced no cancers.

Follin and Lebert (*Traité pratique des maladies cancéreuses*, Paris, 1851), after fourteen days, found distinct cancer formations in the heart and liver of a dog into whose jugular vein juices from a mammary carcinoma had been injected. The experiment is of little value, because no microscopical examinations of the supposed cancerous tissue were made.

Goujon (*Jour. de l'anat. et de phys.*, 1867) operated upon dogs, and was successful in the production of nodular formations where carcinomatous tissue had been inoculated. The microscope was not used to confirm the appearances.

Shattock and Ballance (*Trans. of the Path. Soc. of Lond.*, 1887, vol. xxxviii, p. 412), in a paper upon Cultivation Experiments with New Growths and Normal Tissues, together with Remarks upon the Parasitic Theory of Cancer, report numerous cultivation experiments with cancerous tissues, all of which were negative.

Wehr (*Verhandl. d. deutsche Gesellschaft für Chirurgie*, 1888, vol. xviii, pt. ii, p. 86) inoculated twenty-six dogs with fragments of five vaginal carcinomata and two carcinomata of the penis. The dogs were killed in three to four weeks, and in some of them distinct and large carcinoma nodules were found. It is not improbable that these were fibrous rather than cancerous. No microscopical examination of them was ever made.

Hahn (*Berlin. klin. Wochenschrift*, 1888) transplanted nodules of carcinomatous tissue excised from cancer patients to remote areas in the same individual, and found that the grafts increased in size and invaded the surrounding tissue. This, however, is no more than an artificial metastasis.

Senger (*Berl. klin. Wochenschrift*, 1888, vol. xiv, p. 234) failed in all his attempts to produce cancer by inoculation.

Hanau (*Verhandl. d. deutsche Gesellschaft für Chirurgie*, 1889, vol. xviii, pt. ii, p. 276) made inoculations from one animal to another of the same species. Selecting a vaginal epithelioma occurring in a white rat, he introduced fragments into the *tunica vaginalis testis* of two old white rats. The first rat died after seven weeks with disseminated peritoneal carcinosis. The second was killed in eight weeks and was found to have but two tumors, one, of the size of a pea, at the tail of the epididymis, the other, very small, at the *gubernaculum Hunteri*. A third rat was inoculated from the second, and when killed three months after was found to have a widespread carcinosis. Hanau thinks the failures of other experimenters due to the miscellaneous selection of the animals used, and insists that the inoculations should always be from animal to animal of the same species.

Klebs (*Deutsche med. Wochenschrift*, 1890, vol. xvi, p. 709) wrote a thorough paper upon the various cancer inoculations, reporting many experiments upon rats, in all of which he failed to produce a single tumor. The fragments of tissue introduced were found to be absorbed, no other change than hyaline degeneration being observed in them.

Cornil (*Séance de l'Acad. de méd.*, Paris, 1891, June 23d) in numerous experiments failed to produce cancer by inoculation.

Frank (*Deutsche med. Wochenschrift*, 1891, No. 30) also failed to produce cancer by inoculation into animals.

Shattock and Ballance (*Proc. of the Royal Soc. of Lond.*, 1891, p. 392; also *Med. Press and Circ.*, Lond., 1891, September 9th) again entered the field, and in two papers report a lengthy and comprehensive study of cancer inoculations, in which eight monkeys, three rabbits, seven dogs, three sheep, and numerous other animals were used, in some of which whole scirrhous tumors were introduced into the abdominal cavity. In no case was a cancerous tumor produced, and the common sequence was the absorption of the graft. These experimenters are of the opinion that the few successful inoculations reported are due to lack of thoroughness in the examination of the growths produced.

Senn (*Surgical Bacteriology*) mentions Billroth, Maas, Doutrelepont, Alberts, Senger, and others as having failed in their inoculations, and in his own inoculations, which were made upon dogs, cats, rabbits, and guinea-pigs, saw no other change than an invariable failure of the graft to increase in size.

Duplay and Cazin (*Comptes rendus de la Soc. de biol.*, Paris, 1892, February 22d) in a series of twenty-two inoculations of cancerous tissue from man to rabbits, guinea-pigs, and dogs, attained no positive success, the fragments of tissue being absorbed. In a second series of experiments, made in accordance with the idea of Hanau from dogs to dogs, no other changes than inflammation and subsequent absorption could be detected.

Fischel (*Fortschritte der Med.*, 1892, No. 1) inoculated twenty-three rats, using as material three scirrhous cancers of the mamma, nine other carcinomata, and two sarcomata. All the inoculations were made within fifteen minutes after operation for the removal of the tumors, but not one of the experiments was a success.

It would be useless to add to this already long list, as its results are almost uniform. The work of Langenbeck has been rendered negative by the examinations of Virchow; that of Follin, Lebert, and Goujon is useless because no microscopical diagnosis accompanies it; and as that of Hahn is but an artificial metastasis, we are left nothing but the three inoculations of Hanau against hundreds of carefully made but unsuccessful attempts. The fact that Hanau's three experiments were all successful is a little suspicious, yet we will not reject them, because spontaneous cancer in animals is not rare, because cancer seems to run in families, and because cancer occurs in the old. We can conceive of old rats, with a family predisposition to cancer, developing squamous epithelioma in consequence of the irritation caused by the operation, independently of what tissue was introduced, and would admit this possibility existing in the case of Hanau's rats. The great weight of evidence, however, is such as to confirm the assertion with which we started out, that cancer can not be transmitted from one individual to another by inoculation.

There are numerous cases on record where carcinoma of the breast has subsequently given rise to carcinoma of the skin of an arm kept applied to it, where carcinoma of the lower lip has seemingly inoculated the upper lip, and where cancer of the penis has resulted from contact with a cancerous uterus. The first two illustrations amount to no more than the experiments of Hahn; the last is so extremely rare that it may have arisen spontaneously in every case. We must not omit to consider in relation to these cases that the discharges from cancers are unusually irritating and excoriating, and may in this way produce epitheliomatous growths on contiguous parts without the aid of any micro-organism.

b. Cancer is a Non-inflammatory Disease.—All the known infectious diseases except malaria are inflammatory in type. Tuberculosis, lepra, syphilis, actinomycosis, and glanders are primarily inflammatory, secondarily degenerative. Typhoid fever is more purely inflammatory, while little degeneration occurs in anthrax and charbon symptomatique. Cancer is utterly unlike any of these, being a simple hyperplasia of epithelium extending into neighboring interstices.

I expect to be challenged on this ground and to have the objection raised that the coccidiosus of the rabbit is an infectious disease, but non-inflammatory, and that the resemblance of cancer to this disease is greater than that existing between cancer and other infectious diseases. To this I must reply that coccidiosus *is* an inflammatory disease, and that while it is at first a purely parasitic disease of the epithelial cells, it becomes a chronic inflammation of the mucous membrane with subsequent fibroid thickening, hypertrophy, and polyposis. That there is little homology between it and cancer has already been explained. The great difference between cancer and the infectious diseases can be more conveniently observed in the secondary than in the primary foci. In tubercle, for example, the secondary formations occur by the dissemination of the bacilli, and wherever a bacillus falls, chemiotaxis calls forth a body of leucocytes, connective-tissue cells, *Wanderzellen*, *Schlummerzellen*, and the like, which, together with the cells already present in the part, form the node. In cancer nothing like this takes place, and we can not conceive of the dissemination of "cancer germs" producing a secondary—especially the lymphatic—growths of this disease unless we believe in the transmutability of tissue which will permit the mesoblastic tissues to assume an epiblastic type, an opinion which few will support at present. The secondary growths of cancer depend upon the transportation and multiplication of cancer—*i. e.*, epithelial cells. In their new habitat these foreign cells not infrequently conform to the normal mode of growth and take on their normal arrangement, so that even in nodules in lymph glands, fibrous tissue, etc., distinct alveoli may be observed. I can not conceive of epithelial cells, the hosts of irritating parasites, taking on such a rapid and healthy growth with so little variation from the normal.

c. Epithelium is Normally a Variable Tissue.—Our discussion of the subject would be far from complete should we neglect the peculiarities of the tissue in and from which carcinoma grows, which may have a most important bearing upon the development of the tumor. In youth epithelial tumors are rare, and the changes to which the tissue is subject are overshadowed by the pronounced growth of the connective tissues. As age advances a change in the body equilibrium occurs, in which the formative energy of the connective tissues ceases and distinct changes in the epithelium occur. Upon the face and hands of the aged the skin becomes thin and transparent, and there is a tendency for cellular proliferation to occur in local areas which appear as slightly elevated brownish spots. In some cases these areas send out irregular processes which descend into the deeper tissues and form the nucleus of a squamous epithelioma.

Bowlby (*Brit. Med. Jour.*, 1892, vol. ii, p. 71) made a systematic study of the mammary glands of persons at and beyond middle life, and found in all of them distinct changes in the form of proliferation of cells and alveoli. Beadles (*ibid.*) studied the non-cancerous portions of mammary glands amputated for cancer, and while in all of them he found, as Bowlby had done, proliferatoin of cells and aveoli, in some he found cellular infiltration and irregular cellular proliferation. The former of these changes I am inclined to attribute to age, the latter to the cancer.

In the Morton Lecture on Cancer and the Cancerous Diseases for 1892 (*Brit. Med. Jour.*, 1892, vol. ii), G. Sims Woodhead mentions his observations upon a large number of tongues which he had the opportunity to study, and tells us that in advanced age the epithelium shows a distinct tendency to thicken and grow with the production of descending processes.

In addition to these changes, consequent upon advancing age, we find a great variety of appearances due to the operation of external agencies. Not to go into detail, let us simply consider the following: The hands of laborers, being exposed to friction, are subject to general thickening of the epidermis, with immense thickenings (callosities) at the most exposed portions. When a boot pinches the foot, a more circumscribed epidermal thickening (clavus) is produced. If a papilla or a small group of papillæ are irritated, a very different growth, involving the lower layers of the skin and more organoid in character (verruca), is produced. Upon delicate mucous surfaces chronic irritation produces polypi whose epithelium contains glands. Nor are the changes of the epithelium produced solely by factors operating upon it, but they may be brought about by changes in contiguous tissues. Councilman (*Johns Hopkins Hospital Bulletin*, vol. i, No. 2, p. 20, Jan., 1890) has shown that when, in consequence of chronic inflammation, granulation tissue is formed beneath the epidermis, the epithelium grows downward into the cutis, giving rise to a branching system of epithelium beneath the skin, probably occupying the lymphatic vessels, presenting a picture almost identical with squamous epithelioma and even containing epithelial pearls, but circumscribed in growth by the denser tissues beneath whose resisting powers at once check its progress.

Not long ago I secured from a gynæcologist a portion of a uterine cervix containing a rather minute laceration of long standing. In the process of repair the epithelium had descended to the bottom and almost filled up the fissure. At the outer part, where the tear was clean, the base of the epithelium was smooth, but at the termination of the tear, where it had separated neighboring muscular bundles but partly and left numerous crypts, the epithelium had grown with a branched arrangement fitting into these interstices, and only checked in growth by the greater resistance offered by the undisturbed tissues beyond. Had there been no healthy tissue in these two instances to check the descending processes in their growth, we must have had resulting epithelioma. Indeed, who can say what further extension might not have resulted in the course of time had the cervical tissue been suffered to remain *in situ* instead of being excised?

In this brief fashion we have endeavored to show that the character of epithelium is such as to make a *specific* cause for its irregular development unnecessary. After all that has been said, it would be folly for us to accredit to the very occasional protozoa-like forms which have been mentioned more importance than that given to the accidentally present bacteria. Bacteria of various kinds are nearly always to be found in carcinoma, gaining access from the air, water, or food, either directly when the tumor occupies a surface, or through ducts, etc., when it is glandular in origin. It seems to me not improbable that, if bacteria can thus enter the abnormal tissue, protozoa of various kinds could do likewise. The suggestion of Andrews that the locations in which primary carcinomata occur favors the micro-organismal theory, concluding this from the study of seventy-eight hundred and eighty-one primary cancers (*Pacific Rec. of Med. and Surg.*, San Francisco, 1889–'90, iv, 195), does not make it at all necessary that a specific organism must be present to cause cancer, for the primary cancers are most common upon the most exposed surfaces, as these bear the greatest mechanical, chemical, and physiological abuses.

I do not believe cancer to be due to any *specific* cause, but to have its origin from numerous and often co-operating causes, of which much still remains to be learned, but which will show us the principal factor in its production to be an inherent proliferative tendency in the epithelium itself, in which sense the origin of carcinoma may be said to be epithelio-genetic, not parasito-genetic.

OZONE AND ITS USES IN MEDICINE.

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(*Concluded from page 783.*)

Historical.—It is to the labors of Schönbein (1839) that we owe the identification of ozone with oxygen, or rather nascent, electrified, or contracted oxygen, for, although unnamed, it was not unknown. Its peculiar "sulphurous" odor, perceptible after electrical discharge during heavy thunderstorms, had been perceived even in remote ages, as is evidenced by a reference made by Mohr (1) to some verses in the *Iliad* (viii, 135; xiv, 307) and in the *Odyssey* (xii, 417; xiv, 307).

Other authors who make mention of the peculiar odor accompanying discharges of lightning: Virgil, *Æneid*, ii 691–698. Seneca, *Quæstionum naturalium*, ii, 21–53. Lucretius, *De rerum natura*, vi, 221. Lucanus, *Pharsalia*, vii, 221. Shakespeare, *Cymbeline*, Act v, Scene 4; *King Lear*, Act iii, Scene 2; *Tempest*, Act i, Scene 2; *Pericles*, Act iii, Scene 1, and other passages.

Benjamin Franklin (1749) ascribed the odor accompanying the working of an electrical machine and a discharge of lightning to decomposition produced by electricity (133).

The odor of ozone was also known to those experimenting with frictional electricity, but Martinus van Marum (2) was the first who made any investigations as to its nature.

He experimented at Haarlem, in 1785, with the discharge of the electric spark through the atmosphere and also pure oxygen. He showed that when the electric spark is allowed to act for some time upon "dephlogisticated air" or oxygen, contained in a closed vessel over mercury, a considerable diminution of the gas took place, the mercury was oxidized, and the oxygen acquired an intense odor.

Cruikshank (3) also observed, in 1801, that a peculiar odor was perceptible during the electrolytic decomposition of water, which odor we now know arises from ozone.

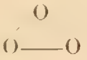
From this period until 1839 nothing was observed in regard to the nature of ozone. On the 13th of March of this year, Schönbein (4) communicated to the Naturalists' Society at Bâle his experiments and observations of the characteristic phosphorus-like odor apparent during the electrolysis of water and the discharge of frictional electricity through the atmosphere. To the new substance he gave the name of ozone, from ὄζων, present participle of ὄζω (I smell). He considered it a substance similar to chlorine or bromine. On the 3d and 17th of April and on the 15th of May, 1844 (5) he again laid before the same society his researches, in a communication describing his discovery that ozone was produced during the slow oxidation of phosphorus in moist atmospheric air. He had, however, changed his views regarding it, believing it now to be a component part of nitrogen, and that this latter element was a combination of ozone and hydrogen.

The true nature of ozone was long a moot point and engrossed the attention of a number of investigators: De la Rive (6), Marignac (6), Frémy (7), Becquerel (7), Andrews (8), Tait (8), Von Babo (9), Fischer (10), Baumert (11), Soret (12), and others.

Odling (122), in 1861, suggested that ozone was a compound of oxygen with oxygen, the combination resulting in a contraction. He also conjectured that this contraction might proceed from a condensation of three volumes of oxygen into two volumes.

It was not until the year 1863 that a really precise definition of the constitution of ozone was promulgated. Soret (12) was the first to pronounce that ozone was really oxygen condensed to two thirds of its volume. His view was at first disputed by some investigators, but eventually confirmed by experiments conducted by himself and others. This opinion as to the constitution of ozone is, up to the present day, the one generally accepted. According to this acceptation, the ozone molecule consists of three atoms of oxygen, whereas the ordinary oxygen molecule contains but two atoms—

Ozone.



$$\begin{array}{c} O \\ O—O \end{array}$$

Ordinary Oxygen.

$$O=O$$

Baumann (13) styles the combinations of oxygen as follows:

$(O)_2$ Ordinary inactive oxygen,
$(O)_3$ Ozone,
$(O)_1$ Active oxygen,

the latter being the most powerful oxidizing agent known. It combines with ordinary oxygen to form ozone.

Production of Ozone.—The great source of ozone is found in the vast operations of Nature. Schönbein, on his discovery of this element, called attention to the fact that the peculiar "sulphurous" or "phosphorous" odor, perceptible in some localities, attendant upon a stroke of lightning, derived its origin from ozone. Andrews and Tait confirmed his views. It is an acknowledged fact that the silent discharge or interchange of opposite electricities from clouds to earth is a factor in the production of ozone; the intervening space being filled with the atmosphere, all the conditions are present necessary to the generation of this gas. The correctness of this theory is supported by the observations of Houzeau and others. Houzeau (14) found that during thunderstorms the air was particularly rich in ozone.

An examination of the atmosphere with the spectroscope reveals the presence of dark absorption lines in the yellow and red parts of the spectrum, always in the same place, proving the existence of ozone in the atmosphere. It has been proved that the color of ozone in a state of great density is blue; it therefore absorbs yellow and red light (133).

Meissner (15) was of opinion that ozone took an active part in the formation of clouds.

Ozone is also formed by the evaporation constantly taking place on the earth's surface; in fact, v. Gorup-Besanez (16) and Belluci (17) observed that it was developed whenever evaporation of water was in rapid process, and the more energetic the process of evaporation, the greater was the amount of ozone. The quantity was also conditioned by the greater or less proportion of salts held in solution by the water. These investigators also found the air strongly ozonized in the neighborhood of waterfalls, irrigation systems, drying houses, near the sea, etc.

Scoutetten (18), Brame (19), and Kosmann (20) showed that plants exhale ozone, together with the oxygen which they give out during the daytime.

According to Ebermayer (21), ozone appears to be present in increased quantity in the vicinity of forests, especially those where trees of the pinus group predominate.

There are a great number of processes by means of which ozone may be produced mechanically, chemically, or by electricity.

Mechanically.—When air is forced through a narrow opening it is found to contain ozone (22).

The nobler metals in a finely divided state, such as gold and platinum, absorb a certain amount of oxygen and retain it in a condensed form, but yield it up to oxidizable bodies, with which ordinary oxygen shows no reaction; iodide of potassium and starch, showing an ozone reaction when brought into contact with black platinum, etc. (23).

Chemically.—Oxygen in contact with water or saline solutions in process of evaporation forms ozone (24).

Whenever oxygen enters into chemical combination it exists in the nascent state, with the accompanying formation of ozone. The moment that the oxygen is set free, some of its atoms, not as yet aggregated to molecules, unite with the already formed oxygen molecules and produce ozone (25).

Schönbein (26) and Kingzett (27) noted the existence of ozone upon heating certain metallic oxides.

Phosphorus, oxidized at the ordinary temperature of the air (28), produces ozone, and the same result is obtained if a current of air is passed slowly through a tube filled with moist pieces of phosphorus. This method was for a long time the general one in use by most experimenters, until the invention of the apparatus by means of which the gas is obtained by the electric process.

Active oxygen is generated during every process where draught and low temperature promote its production and preservation. A strong current of cold air passing through the small flame of a Bunsen burner or a hydrogen flame is ozonized, and may be recognized by its peculiar odor (29).

Deville (123) produced ozone by means of a hot and cold tube. Oxygen heated to 1,400° and immediately cooled is converted into ozone. Similar conditions are present in ozone tubes, where the luminous discharge raises the temperature of the gas, which is then abruptly cooled by its contact with the rest of the gaseous mass in circulation.

Electrically.—Cruikshank (30) and later on Schönbein (30) showed that during the electrolysis of water the characteristic odor of ozone is perceptible.

The generation of ozone by the static electrical machine (31) is a fact well known to those interested in electric science. Both during the spark and brush discharge the odor of ozone is unmistakable.

The method now most extensively employed for the manufacture of ozone is that in which the silent discharge (32) or electrical effluvium is allowed to traverse a narrow dielectric space between two conductors, and, acting upon a stream of oxygen or atmospheric air, generates ozone in large quantities.

Ozone is also evolved by the electrolysis (124) of water, but only in small quantity.

According to Brodie, ozone may be obtained from carbon dioxide by passing this gas rapidly through an induction tube and subjecting it to electric action. By this means he succeeded in converting seventy-five per cent., and even eighty-five per cent., of the eliminated oxygen into ozone.

Chemical.—Ozone is a colorless gas with an intense characteristic odor, reminding one in a small degree of chlorine and nitrous acid. Air containing 1 to 50,000 parts of ozone possesses still this peculiar odor (33). According to Soret the density of ozone is 1·658 (34). The active oxygen generated by treating barium peroxide with concentrated sulphuric acid has quite a different, nauseating odor, which causes a choking sensation in the throat (35). Hitherto ozone has only been obtainable in a diluted state, although both Chappuis (36) and Olzewski (37) claim to have liquefied it. Chappuis succeeded in accomplishing this at a temperature of —105°, with a pressure of 125 atmospheres. Olzewski achieved its liquefaction in sufficient quantity to determine its boiling point, which he states is —159°. The liquid was dark blue in color and nearly opaque in a layer a sixteenth of an inch thick.

Professor James Dewar, in his experiments with liquid oxygen, obtained by electric stimulation of the liquefied gas twenty per cent. of ozone, which was of a very dark blue color—as dark as concentrated indigo. The ozone is exceedingly unstable—to such a degree, indeed, that a beam of light caused it to explode on one occasion. The study of ozone in such concentration requires great delicacy of manipulation.

Scoutetten (38) is authority for the statement that ozone is destroyed at a temperature of 250° C. He passed ozone through a tube heated up to this point.

The solubility of ozone in water was a long-disputed point (39), but all doubt thereon has been removed by the labors and investigations of Engler (40), Nasse (40), Houzeau (41), and particularly more lately Carius (42), Schöne (43), and Leeds (44).

E. Schöne found that ozone obtained by means of the silent electric discharge was soluble in water to the extent of 8·81 c. c. to the litre.

This question has received further confirmation by J. C. Dittrich, a German chemist residing in New York, who has long been experimenting with ozone. He has succeeded in forming a stable compound of this gas with water, by the addition of a very small percentage of hypophosphites.

The statement that the action (125) of ozone on water produced peroxide of hydrogen has been negatived by the experiments of Nasse and Engler (126), Carius (127), and Schöne (128).

Hydrogen peroxide (130) is decomposed by ozone, ordinary oxygen being liberated and water formed. Hydrogen peroxide and ozone are essentially different. Hydrogen peroxide exists in liquid form at ordinary temperature and pressure. Ozone is a gas and is only soluble in water to a small extent, whereas hydrogen peroxide is readily soluble in water.

Statements have been made that oxygen passed through a solution of hydrogen peroxide becomes charged with ozone. Experiments lately made in this city, in which every precaution was taken to exclude all possibility of error, established with absolute certainty that ozone was not produced by any such process as referred to above. No ozone could be detected even with the most delicate known tests. The enumeration of all the distinctive properties of O_3 and H_2O_2 do not lie within the scope of this paper. The reagents employed for their determination are given by Baumann and Gawalowski respectively.

Ozone oxidizes both mercury and silver when moisture is present, but if the metals and the ozone are perfectly dry, no oxidation takes place. If the experiment be sufficiently prolonged, the absorption of the gas takes place, even to the complete disappearance of the volume of oxygen employed. Iodide of potassium in solution is immediately decomposed, assuming a well-marked yellow color. On the addition of a solution of starch, the usual iodine reaction takes place and the solution turns an intense blue (45).

Organic coloring matters exposed to the action of ozone are rapidly destroyed. Chlorine, bromine, and iodine combine with ozone when water is present, forming chloric, bromic, and iodic acids. Ozonized atmospheric air in the presence of limewater produces nitrate of lime in appreciable quantity (45).

Ozone precipitates peroxide of lead in an alkaline solution of lead or its acetate (45). It rapidly decomposes all the salts of manganous oxide (45), either in the solid state or in solution, forming the peroxide of this metal (45).

A solution of ferrocyanide of potassium is transformed by ozone into the red ferricyanide (45). Uric acid is oxidized by ozone to alloxanic acid and urea; the albuminates and sugar are also destroyed by its action (45).

A great number of metallic sulphides are rapidly transformed by ozone into sulphates, particularly the sulphides of iron, lead, copper, and antimony (45).

Baumann (132) observed that ferrous oxide enters into direct combination with ozonized oxygen, without forming active oxygen or liberating it.

Sulphur and selenium undergo no change when submitted to the action of ozone (46).

Phosphorus acted upon by ozone forms phosphorous acid, which is afterward converted into phosphoric acid (47).

Pyrogallic and gallic acid, dry or moist, are at first turned brown and then decomposed into carbonic acid and water (46).

Fluorine appears to exert some action on ozone. It has been shown by Moissan that fluorine decomposes water, forming hydrofluoric acid, and liberating oxygen in the form of ozone. If a few drops of water be placed on the floor of the experimenting tube and fluorine gas be passed in, a dark fog is seen surrounding each drop, which presently clears and resolves itself into the characteristic blue vapor, apparently more than an inch in thickness, and which is found to be that most interesting condensed form of oxygen—ozone—in a state of great density (48).

Nitroglycerin, gun-cotton, iodide of nitrogen, and boride of nitrogen explode in ozone (47).

Of paramount importance in the economy of Nature is the action of ozone in its relation to ammonia. It forms, as shown by Carius, nitrous and nitric acids, and when water is present, a small quantity of hydrogen peroxide. This reaction is essentially important, as the atmosphere is thereby cleared of its ammoniacal constituents, which are disseminated in the air from the processes of decay and putrefaction (47).

Ozone is rapidly absorbed by a large number of vegetable and animal substances, such as albumin, casein, fibrin, and the blood (50). On passing ozone through blood it turns dark at first and then black; on continuing the process the blood forms a clear fluid, containing no albumin, a quantity of gas being given off during the operation (51).

The bleaching properties of ozone are well known. Lawn bleaching is due to the presence of ozone in the atmosphere. As ozone does not affect the most delicate fibers, it is probable that it will in the near future find employment in industrial bleaching processes. Houzeau states that ozone possesses thirty to forty times the bleaching power of chlorine (52).

The action of ozone as an oxidizer, when in moist condition, is of such an energetic nature that it is difficult to construct apparatus the materials of which are not partly destroyed by it. Hence cork, India rubber, wood, paper, and most of the metals are not satisfactory substances for use in the construction of such parts of apparatus as may come into immediate contact with this gas (53).

Ozone is believed to act as an oxidizer just as chlorine and peroxide of hydrogen do. Chlorine seizes upon the H_2 of H_2O, and sets free nascent oxygen; peroxide of hydrogen gives up one atom of unstable oxygen, and again we have nascent oxygen; O_3, or ozone, gives up one atom of oxygen, and thus again we have nascent oxygen. This at least seems to be a received view, but it appears to me that there is some evidence to show that O_3 oxidizes not by parting with one atom of oxygen but by uniting as O_3, and thus forming its own special reactions with organic compounds, differing from simple oxidations by nascent oxygen.

Oil of turpentine, however, according to some investigators, absorbs the three atoms of oxygen of which ozone is constituted (47).

Antiseptic Properties.—The antiseptic properties of ozone are well known. Schönbein showed that one three million two hundred and forty thousandth of ozone in the air was sufficient to prevent the odor of decay in a vessel of sixty litres in which had been placed for one minute one hundred and twenty grammes of decaying, stinking meat (54).

Wood and Richardson passed ozonized oxygen through blood in course of decay, with the result that the blood entirely lost its offensive odor, and even regained, to a certain extent, its original odor of fresh blood (55).

Fox (55), who also experimented with ozone, passing it through putrid matter, concluded that the bacteria in this matter were destroyed.

Scoutetten (56) experimented in the same direction. He placed pieces of meat in vessels containing oxygen and also in vessels containing ordinary air, and found that putrefaction manifested itself most actively in the vessels filled with oxygen. He then tried the action of ozone on putrid meat and other decayed matter.

He placed a piece of meat in an advanced state of decomposition, weighing two hundred and seventy grammes, giving out an insupportable odor, in a vessel of five litres capacity, filled with ozonized air; in one minute the meat was completely disinfected.

He repeated the experiment with three hundred grammes of horse manure emitting a strong ammoniacal odor, which odor disappeared immediately.

Stagnant water poured by the investigator into a vessel containing ozonized air and shaken lost its disagreeable odor immediately.

Experiments on a larger scale were conducted in a room of about eleven hundred metres cubical contents. Two heaps of horse manure were placed about ten metres apart in this room. The manure was in an advanced state of putrefaction and emitted a strong ammoniacal odor. It was allowed to remain in the room for forty-eight hours. When the room was fully infected the contents of four vessels, each of six and eight litres, were poured out. The ammoniacal odor diminished perceptibly, but did not entirely disappear, the manure still continuing to emit its disagreeable smell.

The experiment was continued next day, the manure being, however, removed. The same quantity of ozonized air was allowed to flow over the spots where the manure had been lying; the ammoniacal odor disappeared immediately—so quickly, indeed, as to call forth the astonishment of the bystanders.

Fox (57), Geissler, Stein (58), and Chappuis (59) maintained that ozone was not only a deodorizer, but a disinfectant and a germicide.

Experiments have been made with ozone for the preservation of meat, and a patent is in existence covering this process.

The assumption that ozone, owing to its powerful oxidizing properties, would destroy bacteria, has received the support of many investigators. On the other hand, many have expressed their views on this point in a negative sense. It must be accepted that upon passing ozone through water containing organic matter and living germs the water is completely sterilized and the bacteria are destroyed. Although there has long been uncertainty as to whether ozone had a destructive action on pathogenic bacteria—viz., those producing typhus, cholera, anthrax, etc.—this question is at length solved in a manner favorable to ozone. It is now merely a question of method and of quantity of ozone.

According to Schönbein (61), Clement (61), Richardson (61), Boillot (60), and Scoutetten (57), ozone destroys miasmatic emanations. Their experiments establish that the disappearance of infection and putrid effluvia are effected by ozone when it is present in sufficient quantity.

Pasteur says: "It seems, after all, but stating a truism to say that (extremes of temperature, of course, excepted) it is active oxygen which must be regarded as the greatest known enemy to bacterial life, whether from the action of chlorine, nitric acid, ozone, or H_2O_2. It also follows that these bodies are the best disinfectants." (140.)

In Dujardin-Beaumetz's (62) *Dictionary of Therapeutics* appears the following:

"Ozonized air is a deodorizer and antiseptic. It arrests or prevents the putrefaction of vegetable or animal matters and removes all bad odors resulting from decomposition of organic substances. Provided that it be highly charged with ozone, the air even becomes a powerful bactericide. But it is with this gas as with other disinfectants—it is a microbicide only in the condition of being so abundant in the atmosphere that the latter would become a deleterious and irrespirable medium. In a quantity that can be tolerated by the respiratory organs, ozone possesses only disinfectant properties and no longer germicide ones."

The *vexata questio* has lately approached much nearer a demonstration by the labors of Dr. Ohlmüller (63), referred to above.

Dr. Boutens (64), of St. Raphael, in a communication presented at a meeting of the Société pour l'avancement des Sciences, Marseilles, September 23, 1891, states that ozone is a powerful germicide in tuberculosis.

Dr. Emil Schnee, of Carlsbad, subjected syphilis bacilli and anthrax bacilli cultures to the action of ozone at blood heat, passed through a special disinfecting apparatus. The cultures were placed on small porcelain saucers. The syphilis cultures were destroyed in thirty seconds. The anthrax bacilli, however, withstood the action of the ozone for half an hour. The same results were obtained even when the cultures were inclosed in thin tissue paper.

Oberdörfer's (65) experiments showed that the action of ozone was prevention of the development of bacteria and even their destruction, so that not only prodigiosus and cholera cultures, but even the spores of anthrax were killed.

Dr. Wyssokowitsch (66), of Charkow, convinced himself by a series of experiments that ozone really had a considerable influence on the growth of bacteria; even small quantities of ozone (0·5 to 1·5 mg. in one hundred cubic feet of air) cause a notable difference in their development.

M. Herman, after a series of experiments on the bactericidal value of ozone, is of opinion that ozone is a powerful oxidizer, and as such a potent microbicide in certain conditions, but that it is never present in the atmosphere in quantity sufficient to play the rôle of an antiseptic. He also states that the favorable therapeutic results obtained in certain infectious maladies, particularly tuberculosis, by inhalations of ozone can not be explained by the antiseptic action of this gas; in fact, ozonized air in quantity sufficient to be a bactericide would be irrespirable (134).

Many observers have turned their attention to the disinfecting rôle that ozone plays in the economy of Nature, and have maintained that it is due to ozone alone that the multiplication of germs of epidemic diseases is prevented. They claim that the spread of epidemic diseases is caused by the absence of or a diminution of the normal quantity of ozone in the atmosphere, and is coincident with the appearance of cholera, etc. Others, however, explain that the absence of ozone is due to the increased number of germs which absorb the ozone, arguing that their opponents mistake the cause for the effect.

One of the latest investigators in this particular direction, M. D. A. van Bastelaer (61), *membre titulaire, Académie royale de Belgique*, established a series of observing stations throughout Belgium for collecting ozonometric data. He says that some observers contend that the germicidal action of ozone in the atmosphere would require a proportion of ozone superior to that ordinarily present in the air. That is undeniable, if it were a matter of killing the germs immediately; but the fact must not be lost sight of that the oxidizing action of atmospheric ozone is energetic though slow, and that with time it destroys all organic matters in the atmosphere.

Moffat (67), during the cholera epidemics of 1854 and 1866 in England, made many ozonometric observations which apparently confirmed the coincidence of a diminution or absence of ozone in the air and the appearance of the epidemic.

Cook (68) made similar observations at a series of stations at Bombay in 1866.

Smallwood (69) also noted the fact of a decrease in the quantity of atmospheric ozone during an outbreak of cholera in Canada, and Bœckel (70) believed that similar conditions existed during the cholera epidemic in Strassburg in 1854. Many other observers in different parts of Europe noted a similar coincidence.

One of the latest reports is from Dr. Onimus (71), who publishes tables of his personal observations made at the Military Hospital in 1883. These tables show an absolute and direct relation between the ozonometric conditions and the intensity of the epidemic.

Physiology of Ozone.—The physiology of ozone appears to be as yet incomplete. Its action may be explained and summed up in the fact that the oxygen in the blood exists in the condition of ozone, and this property is so characteristic that Schönbein and His (72) proposed giving to the red corpuscles of the blood the name of ozonophores (ozone carriers). It has been held that the ozone carried by the red corpuscles of the blood alone prevents its coagulation in the veins. The proof of this theory seems to be established by the fact that by passing ozone through coagulated blood it returns to the fluid state.

According to Dr. Otto Ringk (73), the coloring matter of the red corpuscles (hæmatin) contains seven per cent. of iron. This iron takes up the ozone with avidity (iron having the property of absorbing ozone without decomposing it) and yields it up, as required, to destroy all deleterious matter which may have found its way into the circulation or tissues.

Dr. J. Aulde (142) has stated that protoplasm has the property of absorbing and storing up oxygen, which it receives from the hæmoglobin of the blood, the lymph being the intermediary of transfer. The oxygen thus absorbed is afterward utilized as mechanical energy. It is possible that the protoplasm may, as occasion demands, yield the oxygen again to the intercellular fluid. It also dissociates the oxygen molecule, forming ozone in the organism, where its powerful oxidizing properties are called into play, enabling the protoplasmic cells to eliminate the waste products and continue their reconstructive processes.

M. Girard (75) read a paper before the Academy of Medicine, Paris, at its sitting August 11, 1891, relating to the action of ozone on the blood. He states:

1. Ozone transforms albumin into fibrin and the hæmoglobin into oxyhæmoglobin.

2. Its prolonged action in the nascent state on this fibrin is to redissolve it and render it incoagulable by acids or metallic salts.

3. Ozone is the agent in the transformation of the blood into fibrin, and the effects of the ozonization are produced by the iron contained in the globules, and which under the influence of primary ozonization acquires the property of ozonizing ordinary oxygen.

M. D'Arsonval (76) is of opinion that ozone administered by inhalation diminishes the respiratory capacity of the blood.

Professor Wolfberg (77), Strassburg, proved that ozone had a remarkable influence on the elimination of carbonic acid from the blood.

W. Jaworski (135) proved by experiment on the behavior of carbonic acid, oxygen, and ozone in the human stomach that of these three ozone increased most the quantity of gastric juice secreted.

Dr. Ringk (79) deduces from his experiments that the internal administration of ozone ozonizes by means of its oxidizing properties the contents of the stomach, which then, in a condition antagonistic to the development of bacteria, pass on to the intestines, where, on the one hand, the action of the ozone allays any inflammation of the mucous membrane that may exist, and on the other hand establishes conditions unfavorable to the growth of bacilli.

He also was of opinion that it manifested its effect in a twofold manner: First, by being yielded up to the contents of the stomach prior to their passage into the intestinal tract for further digestion, consequently converting the contents of the stomach into ozone carriers, and, further, by diffusion, finding its way into the blood.

Binz (80) showed that ozonized air acted qualitatively the same as nitrous oxide, but differently in different individuals. His experiments were made on the living human organism. Sleep was produced by inhalations of ozone, which, however, did not continue longer than twelve seconds after the discontinuance of the administration of the gas. In some cases there was vomiting, in others only an inclination to vomit.

Dr. Ireland (143) states that the action of ozonized air on animals is as follows: 1. It accelerates the respiration and, it may be inferred, the circulation. 2. It excites the nervous system. 3. It promotes the coagulability of the blood, probably by increasing its fibrin. In the blood, ozone loses its peculiar properties, possibly entering into combination with some constituents of the circulating fluid. 4. Animals may be subjected to the influence of a considerable proportion of ozone in the air for hours without permanent injury, but in the end ozone produces effects which may continue after its withdrawal and destroy life.

MM. Labbé and Oudin (81), in a communication to the *Académie des sciences*, Paris, reporting their experiments in the treatment of consumptives with inhalations of ozone (ozonized air), observed, in subjects whose blood contained oxyhæmoglobin below the normal quantity, that the amount of oxyhæmoglobin was augmented one per cent. at the end of a quarter of an hour's inhalation of the gas. This augmentation persists only twelve to twenty-four hours if the inhalations be discontinued. If they are renewed every day the quantity of oxyhæmoglobin continues gradually increasing, until it attains the physiological figure. Inhalations in subjects with oxyhæmoglobin in normal quantity in the blood only show a slight increase.

MM. Gautier and Larat are of opinion that the production of ozone from the air by means of the electric spark is accompanied by the formation of nitrogen compounds. They doubt that ozone causes an augmentation of the oxyhæmoglobin of the blood and quote M. D'Arsonval as authority that the coloration of the corpuscles of the blood is due to nitrogen compounds. Their clinical experiments with ozone in tuberculous and anæmic subjects were negative.

In the discussion which followed this communication

MM. Labbé and Oudin stated that their opinion as to the therapeutic value of ozone by inhalations of this gas was deduced from their own observations at the following hospitals: La Charité, Aux Enfans, La Maternité, and Des Enfans tuberculeux d'Ormesson, and from foreign sources.

M. D'Arsonval said that if the ozone produced by MM. Labbé and Oudin did not contain nitrogen compounds, then it was possible that feeble doses of ozone might have therapeutical value (135).

Dr. Gautier (82), in a communication to the Société pour l'avancement des sciences, Marseilles, September 21, 1891, insists on the static bath and effluvia of ozone in the treatment of chronic diseases. In his former publications he lays stress upon the advantages of the static bath, which by its expansive force augments nutrition and hastens all the functions, and which in combination with the effluvia of ozone is able to transform the temperament of a tuberculous subject. He says: "Our aim is the modification of the organs, because the behavior of bacilli, nosologically considered, is as a product and not as a cause."

Dr. Boutens (64) (meeting of the Société pour l'avancement des sciences, September 23, 1891) claims that ozone augments the quantity of oxyhæmoglobin in the blood.

Schultz (83) experimented on animals with ozone in poisonous quantity. His conclusions, drawn from the appearances of the internal organs after the death of the animals, are, that as the mucous membrane of the larynx and trachea did not show the slightest trace of any corrosive action of the ozone, the inflamed and changed condition observed of the lungs arose from impairment of the breathing caused by the recurrent cerebral irritation, which was induced by the ozone taken up by the blood and carried into circulation.

Mulvany (84) observed that ozone had a decidedly invigorating effect on the organs of procreation. There is evidence to show that its action has been to restore virility.

Binz (85) found that even in a high degree of ozone narcosis the heart and blood vessels were not perceptibly affected. This investigator also observed that ozone passed without decomposition through a solution of albumin contained in a vessel 1·85 centimetres deep. This experiment establishes the fact that ozone can not only exist in the fluids of the tissues, the greater part of which contain albumin, but is free to act in the extreme parts of the body.

Dr. C. H. Brown (86) also experimented with the action of ozone on albumin. He found that a solution of this substance was not coagulated by ozone, even when heated to the boiling point. Peroxide of hydrogen, on the contrary, coagulated albumin with considerable evolution of gas.

Engler (131) says that many competent authorities do not agree as to the physiological action of ozone, its importance in its relation to the whole process of respiration, the constitution of the blood, and the general welfare of mankind. Without committing himself to any opinion, he thinks it quite possible that atmospheric ozone may find its way into the lungs. If it be considered with what ease, for instance, chlorine, a gas likewise, and which acts with such energy on animal substances, finds its way into the lungs, and if it be remembered how difficult it is, by means of the most effectual methods of absorption, to eliminate the last trace of a gas from a gaseous mixture, it must be admitted that the air we breathe may reach the lungs in an ozonized state. The fact, observed by all who have experimented with ozone, that its odor will cling to the hands and clothing without decomposition for some length of time, is a strong argument in favor of the assumption that ozone does find its way into the lungs and blood.

Nutrition.—Dr. P. le Stunf (87) asserts that ozone acts on the blood and the nutrition.

Dr. H. S. Norris (88), in his experiments at the City Hospital, New York, found that the patients under ozone treatment improved in weight, showing better assimilation and consequently increased nutrition.

Dr. Arthur Ransome (89), in his experiments with ozone inhalations, found that the patients gained in weight, showing improvement in the function of assimilation and consequent better nutrition.

Enrico di Renzi (90), Naples, observed that inhalations of ozone were followed by increase of nutrition.

Machines for the Generation of Ozone.—The various processes by which ozone can be produced has engaged the attention of many inventive minds, with the view of constructing apparatus by which this gas could be generated in such quantity as to render it available not only for industrial purposes but also for medical use.

The aim of the apparatus invented has covered a large field, and includes machines intended for the disinfection of hospitals, rooms, and buildings; the preservation of meat, etc.; improving the quality of wines and spirits and aging them; bleaching, etc.

Some of the apparatus devised include contrivances for the production of ozone by means of the slow oxidation of phosphorus. Among the names of inventors of such machines may be mentioned Schönbein (91), A. W. Sangster (92), R. S. David (93), Radulowitsch (94), Lake (95), F. W. Bartlett (96), and Leeds (97). These contrivances do not give ozone, but rather acids exhibiting the usual iodide of potassium reactions.

Others, P. Rumine (98), Turner and Vanderpool (99), and Oskar Loew (100) again have designed apparatus for the production of ozone, utilizing the application of a current of cold air passed over a Bunsen burner or a modification thereof.

There are not wanting machines making use of static electricity for the generation of ozone. Among the inventors of this class of machine may be mentioned H. D. Hall, patent July 31, 1883.

Other inventors have attempted the production of ozone apparatus in which the gas is generated by chemicals.

The great defect in these inventions was the limited quantity of ozone yielded and the consequent expense of working them.

Carius (129) describes an apparatus for the production of ozone by the electrolysis of water with twelve to sixteen Bunsen elements. But this method yields only a small quantity of ozone, and can be recommended for use only when it is desirable to obtain ozone in concentrated condition without regard to its purity.

Apparatus by which ozone is generated by the silent discharge or electric effluvium seemed to offer the best solution of the production of ozonized oxygen or air on a large scale.

The production of a suitable effluvium has led to the construction of many arrangements, all embodying a similar principle, which consists of allowing a stream of oxygen or air to pass between dielectrics (thin plates of glass or other material of different specific inductive powers) interposed between two conductors of a certain length placed parallel. The electricity of high tension is discharged in an effluvium through the glass plates and the oxygen or air passing between them, which is then ozonized.

The pioneer attempt to produce ozone by electricity was the apparatus devised by Schönbein (101), and afterward used by Marignac, De la Rive, Fremy and Becquerel, Andrews, and others. It consisted of a tube arranged somewhat after the manner of a eudiometer, filled with air or, better still, oxygen, placed over mercury or sulphuric acid. Two platinum wires, melted into the tube, were placed in communication with the poles of an induction coil. The electric spark passing between them effected the ozonization of the oxygen. By this method only a proportionately small amount of ozone is obtainable.

The first apparatus utilizing the generation of ozone by the electric effluvium was that of von Babo (102), modified by Houzeau. This apparatus consists of a glass tube of from one to two millimetres in thickness and forty centimetres long. A platinum wire of somewhat large diameter is placed along the axis of the tube, and a second platinum wire of small diameter is wound spirally round the outside of the same tube. The two wires are placed in communication with the two poles of a Ruhmkorff coil. In order to obtain ozonized oxygen a slow current of this gas is passed into the tube.

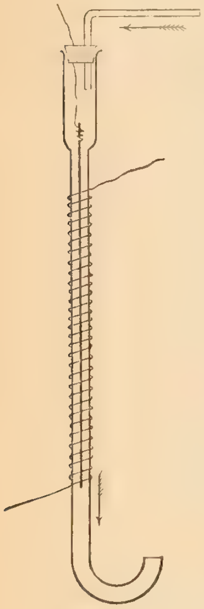


Fig. 1.

Werner Siemens (103) also devised an apparatus consisting of two concentric glass tubes melted together near the top and provided with two smaller tubes, one at each end, for the passage of the gas through the annular space formed by the concentric tubes. The internal tube is covered with tin foil on the inner side, the external tube being similarly treated on the outside. The whole is placed in a vessel of water, water also being contained in the inner tube, one electrode dipping into each respectively. It will be apparent that in this apparatus the effluvium must traverse the two surfaces of glass and the volume of gas passing through.

Ruhmkorff (104) constructed an apparatus formed of parallel plates of glass separated by a very small interval, each plate having a sheet of tin at its upper part. These were joined up in pairs with two metallic buttons connected with the poles of a bobbin. A large number of these plates, superimposed and inclosed in a box furnished with tubulures, will produce the effluvium over a very wide surface.

Siemens's arrangement seems to have suggested the arrangement of D'Arnoult, Thenard, and Bertholot.

Of these, Thenard's (105) tube is made up of three concentric tubes, properly joined so as to present three spaces, one cylindrical and the other two annular, separated by glass partitions. The central tube contains conducting liquid, serving as an armature. The outer annular space is filled with the same liquid, which consists of chloride of antimony dissolved in hydrochloric or concentrated sulphuric acid. Two platinum wires, in connection with the poles of an induction coil, serve to convey the electric current to the conducting liquids. The oxygen or air to be ozonized passes through the intermediate annular space. The apparatus in use is placed horizontally.

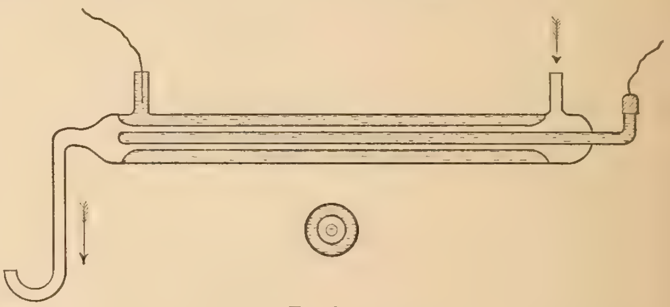


Fig. 2.

The Bertholot (106) apparatus consists of a thin glass tube thirty millimetres in diameter and from thirty to thirty-five centimetres in length, closed at the lower end. It is provided with two eduction tubes, one at each extremity. Another thin glass tube, also with closed lower end, is placed in the axis of the larger tube, a little above the upper eduction tube, and fixed to it, the connection of the two tubes being ground with emery to insure perfect junction. The inner tube is filled with a conducting liquid into which one of the electrodes is introduced. The whole arrangement is put into a glass vessel also containing a conducting liquid, the other electrode dipping into it. The apparatus must be well centered, so that the two surfaces may be equidistant. The oxygen or air passes by way of the eduction tubes through the annular space formed by the two concentric tubes.

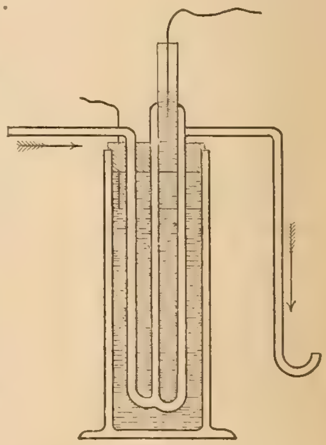


Fig. 3.

Tisley, of London (107), constructed an ozone generator, devised by Wills, a modification of Siemens's, and which permits of refrigerating the oxygen passing under the influence of the electric discharge. This was effected by means of a current of cold water. It was claimed that this arrangement prevented the partial decomposition of the ozone caused by the heating of the tube by the electric current.

Brin Brothers (108), of London and Paris, are the inventors of an apparatus generating ozone. They employ the Bertholot tubes arranged in series.

Among other inventors of ozone machines and apparatus may be mentioned Boillot (109), Wislicenus (110), Kolbe (111), Yost (112), Fahrig (113), Schereller and Weise (114), and Andreoli.

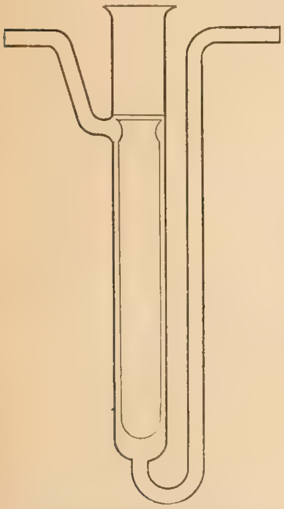


Fig. 4.—Ozone tube for water electrodes.

The rapid strides of electric science and the facility with which currents of high tension are now obtained have also resulted in the development of more perfect apparatus for the production of ozone, and the Ozone Company of this city have established a plant for its manufacture on a commercial scale.

They are the makers of an improved ozone machine which is specially adapted to the needs of the medical profession and may be used for the administration of ozone by inhalation. The machine is particularly suitable for the diffusion of ozonized air in the wards of hospitals, either for disinfecting purposes or for the treatment of consumptive patients.

The Ozone Company's machine consists of motor, blower for forcing the air to be ozonized through the apparatus, transformer, and the ozone generator proper. The motor, which may be driven by the current available from any electric plant, supplies also a derived current to the generator by means of a commutator of special construction. High potential is secured by passing the current through a specially wound transformer before it reaches the generator. The motor operates a small blower, which forces the air through an ingeniously devised drying tube and thence to the ozone generating tubes. The generator is formed of a group of ozone tubes arranged in a circle. A modification of the Siemens's tube is employed. The amount of ozone given off by this machine is very great, and will in a very short time make itself apparent, by its characteristic odor, in the most distant parts of a large room or hall. The whole machine occupies only a small space.

Further Comments upon the Value of Ozone in Therapeutics.—The therapeutic value of ozone has been a subject of dispute ever since its discovery by Schönbein, and much has been written pro and con by advocates and opponents.

Prominent among diseases which it has been considered would be benefited by ozone is tuberculosis.

During the past two or three years many practitioners have been experimenting with ozone in the treatment of this disease. Judging from the data now at hand, the results have been satisfactory and worthy of continued effort.

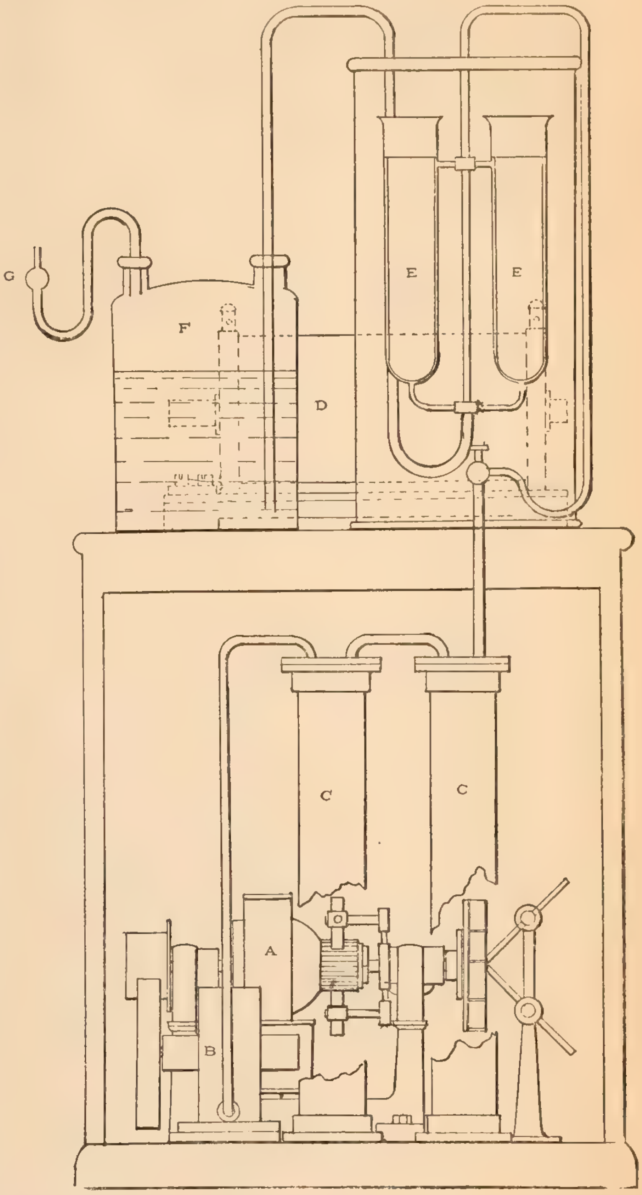


Fig. 5.—Ozone machine. A, motor; B, blower; C C, drying tubes; D, transformer; E E, ozone generators; F, wash bottle; G, goose-neck inhaling tube.

The labors of MM. Labbé and Oudin (116), have already been referred to. They establish the fact that the administration of chemically pure ozone (ozonized air) inhalations has curative value. Their statements are verified by the report of Dr. Boutens (115), of St. Raphael, who, as a result of his experiments, concludes that ozonized air (one tenth of a milligramme to the litre of air) is, when inhaled, absolutely innocuous, that it possesses a constant curative action in tuberculosis, and augments the quantity of the oxyhæmoglobin in the blood.

Dr. Augustus Caillé, of this city, has experimented with the small ozone generators of Labbé and Oudin (136). He reports that in three typical cases of limited apex tuberculosis a local improvement was not obtained;* that in pertussis the inhalations have a very distinct curative effect, while in chlorosis and anæmia inhalations are exceedingly valuable and give better and prompter results than any other form of medication; and, finally, that daily inhalations increase the quantity of oxyhæmoglobin in the blood from one to four per cent. in a short time.

Dr. Caillé's observed fourteen reported cases are worthy of careful study.

Dr. Arthur Ransome (117), of Liverpool, treated consumptive patients with inhalations of ozone. He published the results of his treatment, which may be summed up as follows:

Thirteen cases treated—two in the third stage; most of them under observation for more than a year; two of them for two years; only two have distinctly deteriorated in the time, and one of them has died of pharyngeal phthisis.

He found during treatment that there was continued freedom from fever, absence of night sweats, diminution in the amount of expectoration, improvement of appetite and in sleeping power, and much consequent gain in weight.

He also states that if his repeated microscopic examinations were to be trusted, the ozone diminished the number of bacilli in the expectoration.

According to Dr. P. Le Stunf (119), ozone generated by electricity, and in the proportion of one tenth of a milligramme to the litre of air, is quite innocuous, not only to animals, but to human beings in health and disease. By inhalation it increases the oxyhæmoglobin from one to two per cent. Its action is well borne by tuberculous subjects when administered in therapeutic doses. After fifteen to twenty sittings improvement is perceptible. It is a question with him as to whether it does not act as a microbicide in consumptive individuals. It acts on the blood and nutrition. The appetite returns, the digestion improves, the night sweats diminish; sleeping power sometimes reappears, even in patients that have long been tormented by insomnia. There was also an amendment of pulmonary lesions, real retrogression of the local phenomena.

Dr. Otto Ringk's (120) experience is that ozone (ozone water) treatment in tuberculosis gave excellent results.

Dr. Henry S. Norris, of this city, treated thirteen cases of phthisis with ozone water. Of this number, five who had extensive disease were not improved; in seven marked improvement took place: increase in weight, diminution and cessation of cough and expectoration, termination of night sweats.

Dr. C. E. Quimby, Dr. W. B. Wood, Dr. Conkling, as well as several other gentlemen of this city, have also, I am informed, been investigating the therapeutic properties of ozone, and will, no doubt, soon report their experiences.

Aquozon and kodozonol (ozonized cod-liver oil) have been used at the French Hospital, New York. It is stated that the patient showed a steady gain in weight, owing to increased assimilation.

Diabetes.—Dr. Emil Schnee, of Carlsbad, is of the opinion that ozone is the remedy *par excellence* for diabetes. He states that diabetes is based on the incapacity of the protoplasm for the production of carbonic acid. The use of ozone places the physician in a position to supply this lack of carbonic acid. He has prescribed aquozon to his patients both in this country and in Europe with happy results.

Dr. C. H. Avery, Secretary of the New York County Medical Society, used aquozon on himself in the treatment of this disease. He reports as follows: "I am carefully watching the action of the ozone water in my own case. I first discovered sugar in May, 1885, and have resorted to many remedies. Sugar has been constant but in varying quantity, although starchy foods have been strictly avoided. My observations thus far as to the effect of the water are:

"1. A decided diminution of thirst, so that I used no more than a pint of water for twenty-four hours.

"2. An increase of vital force and muscular strength; a general impression of feeling better.

"3. It procures sound and refreshing sleep and allays nervous irritability. This is specially noticeable.

"During the past week there seems to be a slightly less amount of sugar, amounting to about 3° specific gravity. It is not to be expected that in a case of so long standing sugar will disappear so soon."

Private reports to me from physicians who have experimented with aquozon in diabetes show that marked improvement has taken place.

Cholera.—As cited above, many observers have insisted that there is a direct relation between the appearance of an epidemic of cholera and a diminution of the amount of ozone in the atmosphere. In 1883 Dr. Onimus (121), during the cholera epidemic, made some experiments at Marseilles, in order to personally satisfy himself as to the correctness of the assertions of previous investigators, and also to establish if possible the therapeutic value of ozone in the treatment of this infection. These experiments were conducted at the instigation of M. Gauckler, manager of La Compagnie des chemins de fer de l'État. This gentleman, while on the central committee of meteorology in Alsace in 1865, was much struck by the coincidences in the infected localities. He placed at the disposal of Dr. Onimus the material and staff of La Compagnie P. L. M., in order to carry out the necessary investigations. An ozone plant was installed at the cholera hospital, and the gas was allowed to diffuse itself slowly in one ward, while another, for comparison, was kept free of ozone. Dr. Onimus found that in the male ward no deaths took place during the two days that it was kept under the influence of the ozone. He then experimented in the female ward, with the result that during five days only two deaths occurred, and one of these was a woman who gave birth to a dead child. In his pamphlet on the subject he says: "We can certify that this method, I hesitate to say medication, gives excellent results." *

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* Dr. Caillé stated, in the discussion following the reading of this paper, that in one instance—the inhalations having been kept up for a year—he could now say that there had also been an improvement in the physical signs at the apex.

* During the interval between the reading of the foregoing paper and its publication my attention has been called to an article by Pro-

Bibliography.

1. Poggend. *Annalen*, xci, 625.

2. *Beschreibung einer Elektrisirmaschine*, von Martinus van Marum. deutsch. Uebersetzung, Leipzig b. Schwickert, 1786, I. Thl., 25 u. 28, I. Fortsetzg., 1788, 39. Saxtorph's *Elektricitätslehre*, übers. v. Fangl., I. Thl., 434.

3. Gilbert's *Annalen*, vii, S. 107.

4. *Berichte über d. Verhandlgn. d. naturforsch. Ges. in Basel*, iv, 58 u. 66. *Abhandlgn. d. II. Classe d. bayer. Akademie d. Wiss.*, Bd. iii, Abthl. I, S. 257. Poggend. *Annal.* l, 616.

5. *Berichte über d. Verhandlgn. der naturforsch. Ges. in Basel*, vi, 16. *Ueber d. Erzeugung des Ozons auf chem. Wege*, von Chr. Fr. Schönbein, Basel, 1844, S. 155.

6. Poggend. *Annal.*, liv, 402. Poggend. *Annal.*, lxv, S. 75. *Compt. rend.*, xx, 1291. *Compt. rend.*, xx, 808. Aus Arch. ph. nat., i, 81, im *Jahresber. f. Chem.*, 1857, 78. Aus N. Arch. ph. nat., xii, 155, im *Jahresber. f. Chem.*, 1861, 101. Aus Arch. ph. nat., xix, 294, im *Jahresber. f. Chem.*, 1852, 303. *Traité d'électricité*, ii, 417.

7. *Annal. Chim. Phys.* (3), xxxv, 62. *Annal. Chim. Pharm.*, lxxxiv, 206. *Compt. rend.*, xxxiv, 399.

8. *Lond. Soc. Proceed.*, ix, 606. *Phil. Mag.* (4), xvii, 435. *Annal. d. Ch. u. Pharm.*, cxii, 185. *Phil. Mag.* (4), x, 455. *Annal. d. Ch. u. Ph.*, xcvii, 371. *Jour. prakt. Chem.*, lxvii, 494. Poggend. *Annal.*, xcviii, 435. *London Royal Pro.*, viii, 498. *Phil. Mag.* (4), xv, 146. *Annal. d. Chem. u. Pharm.*, civ, 128. Poggend. *Annal.*, cii, 625.

9. *Annal. d. Chem. u. Pharm.*, Suppl. ii, 265. *Bull. Soc. chim.*, vi, 340.

10. Poggend. *Annal.*, lxv, S. 190; lxvi, S. 163, 168, 593.

11. Poggend. *Annal.*, lxxxix, 38. *Annal. Chem. Ph.*, lxxxviii, 221. *Jour. prakt. Chem.*, lix, 350. Poggend. *Annal.*, xcix, 88. *Annal. Chem. u. Ph.*, ci, 88. *Jour. prakt. Chem.*, lxx, 446.

12. *Annal. d. Chem. u. Pharm.*, cxxvii, 38. *Jour. f. prakt. Chem.*, xc, 216. Poggend. *Annal.*, cxviii, 623. *Compt. rend.*, lvi, 390. *Compt. rend.*, lvii, 604. *Annal. d. Chem. u. Ph.*, cxxx, 95. Poggend. *Annal.*, cxxi, 268. *Phil. Mag.* (4), xxvi, 554. *Annal. d. Chim. et Phys.* (4), vii, 113. *Compt. rend.*, lxi, 941. *Annal. d. Chem. u. Pharm.*, cxxxviii, 45. *Chem. Ctrlbl.*, 1866, 33. *Phil. Mag.* (4), xxxi, 82. Poggend. *Annal.*, cxli, 294. *Chem. Ctrlbl.*, 1870, 385.

13. *Chem. Ctrlbl.*, 1881, No. 28.

14. *Annal. d. chim. phys.* (4), xxvii, 60.

15. *Untersuchungen über d. Sauerstoff*, Hannover bei Hahn, 1863. *Neue Untersuchungen über den elektrischen Sauerstoff*, Goettingen bei Dietrich, 1869. *Jahresber. d. Chem.*, 1863, 126.

16. *Annal. d. Chem. u. Pharm.*, clxi, 232.

17. *Ber. d. deutsch. chem. Ges.*, 1875, 905.

18. *Compt. rend.*, xlii, 941; xliii, 216.

19. *Instit.*, 1856, 282. *Jahresber. f. Chem.*, 1856, 267.

20. *Compt. rend.*, lv, 731.

21. *Ueber den Einfluss d. Wälder auf d. Beschaffenheit d. Luft*, Ebermeyer, 1873, und *Monit. scientif.* (3), iii, 895.

22. Saintpierre (*Compt. rend.*, lviii, 420; *Chem. Ctrlbl.*, 1864, 697).

23. Schönbein. *Verhandlngn. d. naturf. Ges. Basel*, ii, 35. *Jour. prakt. Chem.*, liv, 65.

24. *Ber. d. deutsch. chem. Ges.*, 1875, 905; 1876, 581. *Gazz. chim. ital.*, 1876, 88.

25. *Compt. rend.*, xl, 947. *Jour. f. prakt. Chem.*, lxv, 499. Poggend. *Annal.*, xcv, 484. *Annal. d. Chem. u. Pharm.*, cliv, 215. Aus Cimento, ii, 291, im *Jahresber. f. Chem.*, 1855, 287. Schönbein, *Verhandlgn. d. naturf. Ges. Basel*, iii, 305. *Jour. prakt. Chem.*, lxxxvi, 70. Böttger, *Jour. prakt. Chem.*, lxxxvi, 377, u. *Jahresber. d. physik. Vereins Frankfurt*, 1859–1860. *Verhandlgn. d. naturf. Ges. Basel*, i, 246. *Jour. prakt. Chem.*, lxvi, 280. *Annal. Chem. Ph.*, cxlii, 107. *Chem. News*, xxv, 242. *Jour. prakt. Chem.*, lxxxvi, 377. Aus *Bull. Soc. chim.*, Sitzg 11 Mai 1860, im *Jahresber. f. Chem.*, 1860, 66.

26. *Verhandlgn. d. naturf. Ges. Basel*, i, 252. *Jour. prakt. Chem.*, lxvi, 286.

27. *Chem. News*, xxv, 242.

28. *Ber. über d. Verhandlgn. d. naturf. Ges. Basel*, vi, 16.

fessor W. G. Thompson, entitled Notes on the Physiological Action of Ozone Preparations, published in the *Medical Record* of March 3, 1894.

Professor Thompson gives therein the results of experiments with hydrogen peroxide injected in large quantities into the veins of the animals experimented upon, and deduces therefrom that ozone has a harmful action on the blood. It is obviously an untenable position to attribute the action of hydrogen peroxide to ozone, for it is a well-known fact in chemistry that these two bodies differ entirely in their composition and behavior toward organic substances. I may instance the marked different actions of ozone and H_2O_2 on albumin. Moreover, ozone can not exist where hydrogen peroxide is in excess, and, although a dilute solution of hydrogen peroxide may exist where ozone is present in large quantity, yet the latter has a destructive action on the hydrogen peroxide, which it converts into passive oxygen and water ($H_2O_2 + O_3 = H_2O + 2O_2$). Ozone can be produced only in minute quantity except by very elaborate apparatus, such as used by Dr. Dewar in his experiments with liquefied air, in which ozone was produced in a liquid state, only to resume the condition of passive oxygen with explosive force. Ozone in dilution is not explosive, but reverts gradually to passive oxygen without violent chemical action.

The action of ozone is that of the whole molecule O_3, whereas the action of hydrogen peroxide is due to the yielding up of its atom of active oxygen.

That ozone does exist in the blood has been proved by actual experiment. The introduction of H_2O_2 into the circulation results in gas embolism and chemical changes in the blood.

The inhalation of hydrogen peroxide in the gaseous state (antozone) is very irritating and causes a feeling of strangulation. Ozone free from nitrous products, as employed by the writer, is, on the contrary, not disagreeable when inspired in moderate quantity, and does not produce any such distress. The irritant effects often ascribed to ozone are mostly due to the nitrous and nitric acids which are present when it is generated by electrolysis of the air.

With regard to the physiological action of ozone, I think that the views now accepted by competent authorities on this subject, and which are referred to in the foregoing article, are sufficiently convincing of the fact that ozone, free from nitrous products and in therapeutic dose, has no injurious effect on the animal organism. The fact that there are many drugs that are violent poisons, and which are injurious and even deadly in their effects if administered in large quantities, does not in any way detract from their value in the treatment of disease. The same line of reasoning will apply to ozone—we deal with it in therapeutic quantity and not in noxious dosage.

Some of the views advanced by Professor Thompson are apparently self-contradictory, and his experiments mainly demonstrate:

1. That dogs may be killed by injecting large quantities of hydrogen into their blood-vessels. (Experiments 1 to 6.)
2. That an animal dies when both vagi are cut. (Experiment 7.)
3. That hydrogen peroxide destroys animal tissue. (Experiments 8 to 15.)
4. That either a certain sample of ozone water was inert or, as no examination was made afterward of the dog's blood, the experiment was inconclusive. (Experiment 16.)

The foregoing facts, with the exception of the last, are well known.

Experiments are now in progress upon the same lines as those conducted by Professor Thompson, with preparations that undoubtedly do contain ozone, in order to establish with more certainty the facts observed by so many investigators. Until this is done it can not be maintained that ozone preparations are destructive in their action on the blood, as has been demonstrated to be the case with H_2O_2.

29. Boettger, *Chem. Ctrlbl.*, 1870, 161. Boecke, *Chem. News*, xxii, 57.

30. *Ber. über d. Verhandlgn. d. naturf. Ges. Basel*, iv, 58, 66. *Abhandlgn. d. II. Classe de bayr. Akad. d. Wiss.*, III. Abtheilg., i, 257. Pogg. *Annal.*, l, 616.

31. *Ber. d. deutsche chem. Ges.*, 1876, 84. *Chem. News*, xxvi, 113. *Phil. Mag.* (4), xliv, 156.

32. Pogg. *Annal.*, cii, 120. *Nature*, viii, 148. *Annal. d. Chem. u. Phar.*, ii. Suppl., 267. Engler u. Nasse, *Annal. d. Chem. u. Pharm.*, cliv, 215. *Compt. rend.*, lxxiv, 256. *Annal. chim. phys.* (4), xxii, 150. *Dictionn. d. chim.*, Wurtz, ii a, 719. *Compt. rend.*, lxxv, 214 u. 1712. *Compt. rend.*, lxxv, 118. Bericht einer akad. Commission über d. Apparat., *ibid.*, 1735. Regnault-Strecker's *Lehrbuch d. anorg. Chem.*, ix. Aufl. v. Wislicenus, S. 73. *Kurzes Lehrbuch d. anorg. Chemie*, v. H. Kolbe, S. 106. *Annal d. chim. phys.* (5), x, 165. *Chem. News*, xxvi, 113. *Phil. Mag.* (4), xliv, 156. *Ber. d. deutsch. chem. Ges.*, 1876, 84. *Gazz. chim. ital.*, 1876, 88.

33. Dr. O. Ringk, *Wie können wir Ansteckungskrankheiten als Diphtheritis, etc., mit Erfolg entgegentreten?* 1890, S. 71.

34. *Annal. d. Chim. u. Phys.* (4), vii, 113. *Compt. rend.*, lxi, 941. *Annal. d. Chem. u. Phar.*, cxxxviii, 45. *Chem. Ctrlbl.*, 1866, 33. *Phil. Mag.* (4), xxxi, 82.

35. Dr. O. Ringk, as above cited.

36. *Compt. rend.*, xci. Sur la liquéfaction de l'ozone.

37. *Pharm. Era*, 1890. On the liquefaction of ozone.

38. *L'Ozone, ou recherches chimiques*, etc., 1856, p. 37.

39. Schönbein, Pogg. *Annal.*, lxvi, 293. Marignac, *Annal. chim. phys.* (3), xiv, 254. Andrews, Pogg. *Annal.*, xcviii, 435. C. Hoffmann, *ibid.*, cxxxii, 617. Boettger, *Chem. Ctrlbl.*, 1872, 112, u. 1874, 386. Fox, *Ozone and Antozone*, London, 1873, S. 29. Rammelsberg, *Ber. d. deutsch. chem. Ges.*, 1873, 603. *Annal. d. Chem. u. Ph.* liv, 130.

40. *Annal. d. Chem. u. Ph.*, cliv, 215.

41. *Annal. chim. phys.* (4), xxvii, 15.

42. *Ber. d. deutsch. chem. Ges.*, 1872, 520; 1873, 806. *Annal. d. Chem. u. Phar.*, clxxiv, 1.

43. *Ber. d. deutsch. chem. Ges.*, 1873, 1224.

44. *Ber. d. deutsch. chem. Ges.*, 1879, 1831.

45. Scoutetten. *L'Ozone, ou recherches chimiques*, etc., 1856.

46. Dr. O. Ringk. Above cited; see 33.

47. Engler. *Historisch-kritische Studien über das Ozon*, 1879, S. 38.

48. *Scien. American*, suppl., Dec. 12, 1891. Quoted from *La Nature.*

49. Engler. V. Gorup-Besanez, quoted, above-cited treatise (47), p. 39.

50. Scoutetten. Above cited (45), p. 38.

51. Dr. Ringk. Above cited (33), p. 73.

52. *Compt. rend.*, lxxv, 349.

53. Engler. Above cited (47), p. 37.

54. *Zeitschrift für nat. Medicin*, Bd. xv, 391.

55. *Ozone and Antozone*, by Fox, 30.

56. Scoutetten. Above cited, p. 182.

57. Scoutetten. Above cited, p. 188.

58. Schmidt's *Jahrbücher*, 1875, 1. *Sitz.-Bericht. d. niederrhein. Ges. für Nat. u. Heilkunde*, Bonn, January, 1875. *Botan. Jahresb.*, v, 88.

59. *Bullet. de la Soc. chim. de Paris*, 1881, t. xxxv.

60. Boillot. *Compt. rend.*, t. lxxxi, 1875.

61. D. A. van Bastelaer. *L'Ozone atmosphérique.* Acad. Royal de Belgique, séance 24 Sept. 1892, cites Schönbein, Clement (1849), Richardson (1863).

62. Ozone. *Scientific Amer. Suppl.*, Jan. 23, 1892, from *La Nature.*

63. Ueber d. Einwirkung d. Ozons auf Bakt. *Arbeiten d. königl. Gesundsheitamte*, Bd. viii, 229.

64. *De l'Ozone en thérapeutique.* Séance 23 Sept., 1891, Assoc. pr. l'avancement des sciences. Congrès à Marseille. *Progrès médical*, t. xiv, p. 232.

65. Ueber d. Einwirkung d. Ozons auf Bakt. *Jahresber.*, Virchow, 1889.

66. *Ueber d. Einfluss Ozons auf d. Wachsthum d. Bakterien.*

67. *Ozone and Antozone*, by Fox, 127. On Meteorology in relation to Epidemic and Sporadic Cholera, by Moffatt. *Lancet*, Sept. 9, 1865.

68. *Brit. Assoc. Report*, 1869. Fox, p. 130.

69. *Ozone and Antozone*, Fox, pp. 130–136.

70. *Ueber d. Cholera*, 1865, Fox, p. 135.

71. *Ozone et Choléra*, par le Dr. Onimus, 1884. G. Masson, Paris.

72. *Ibid.*, p. 18. *Verhandlungen d. naturf. Ges. Basel*, i, 457; ii, 9. See Schönbein, *Verhandlgn. d. naturf. Ges. Basel*, ii, 14.

73. Dr. Ringk. Above cited (33), p. 58.

74. *Phys. Chem.*, vol. i, 1880.

75. Acad. de médecine, Paris, séance aout 11, 1891.

76. Société de biologie, séance du 16 mai, 1891. *Progrès médical*, t. xiii, 1891, p. 430.

77. Quoted by Dr. O. Ringk in his treatise, see (33), p. 24.

78. Virchow's *Archiv*, 1884, i, 135.

79. Cited above (33), p. 17.

80. Quoted by Dr. O. Ringk, see (33), p. 20.

81. Jahresber. Ueber d. Leistungen und Fortschritte in d. gesammt. Medizin, Virchow's *Archiv*, 1891. *Comtes rendus. Progrès médical*, t. xiv, 86, 1891. Séance de l'Acad. de sciences, 20 juillet, 1891.

82. Assoc. pr. l'avancement des sciences; congrès à Marseille, 21 sept., 1891. *Progrès médical*, t. xiv, p. 230.

83. *Arch. für exp. Path. u. Pharm.*, 1892, xxix, p. 344. Sur l'empoisonnement chronique par l'ozone, *Revue internationale de bibliographie*, No. 17, 1892. *Therap. Mittheilngn. aus Vereinen*, O. Liebreich, March, 1892.

84. Quoted by Dr. Samuel S. Wallian. A Study in Aerotherapeutics, *N. Y. Medical Journal*, July 25, 1891, vol. liv, No. 660, p. 101.

85. *Berliner klin. Wochenschrift*, 1882. Ozonized Air as a Narcotic.

86. *The Chemical Relation of Ozone and Hydrogen Peroxide.* By Dr. Charles H. Brown, N. Y.

87. Merck's *Bulletin*, September, 1892.

88. *N. Y. Medical Journal*, Nov. 5, 1892. The Internal Administration of Ozone in the Treatment of Phthisis. Report of cases.

89. *Med. Chron.*, May, 1889, No. 56, p. 797; also April, 1888.

90. *Archiv für Patholog. Anat. u. Physiol.*, Bd. civ. Ueber d. Ozon.

91. Engler. Above cited (47), p. 34.

92. *Ber. d. deutsch. chem. Ges*, 1878, 815. U. S. Pat., 199,997, Oct. 29, 1877.

93. *Ber. d. deutsch. chem. Ges.*, 1875, 275. Wagner's *Jahresber.*, 1875, 463. Engl. Pat. No. 3,190, Oct. 2, 1873.

94. *Ber. d. deutsch. chem. Ges.*, 1877, 2059.

95. *Ibid.*, 1877, 904. Engl. Pat. No. 3,294, Sept. 20, 1875.

96. *Ibid.*, 1878, 1469. Engl. Pat. No. 2,697, June 12, 1877.

97. *Annal. d. Chem. u. Phar.*, cxcviii, 30.

98. *Ber. d. deutsch. chem. Ges.*, 1872, 123.

99. *Ibid.*, 1873, 1553.

100. *Dingl. polyt. Jour.*, ccxiii, 130. *Jahresber.* v. Wag-

ner, 1874, 404. *Ber. d. deutsch. chem. Ges.*, 1872, 740. Pat. France, 92,134, July 4, 1871.

101. Engler. Cited above (47), p. 31.

102. *Annal. d. Chem. u. Phar.*, ii. Suppl., 267.

103. Poggend. *Annal.*, cii, 120.

104. The Formation of Ozone by Electric Discharges. *Scientific American Suppl.*, April 26, 1890 ; from *La Lumière électrique.*

105. *Compt. rend.*, lxxv, 118. Bericht einer akad. Commission über d. Apparat., *ibid.*, 1735. *Scientific Amer. Suppl.*, above quoted (104).

106. *Annal. d. chim. phys.* (5), x, 165. *Scien. Amer. Suppl.*, cited above (104).

107. *Ber. d. deutsch. chem. Ges.*, 1873, 769. *Nature*, viii, 148.

108. *Scientific American.* Engl. Pat. No. 11,846, Sept. 17, 1886.

109. *Compt. rend.*, lxxv, 214 and 1712.

110. Regnault-Strecker's *Lehrbuch d. anorg. Chem.*, ix. Aufl., Wislicenus, S. 73.

111. *Kurzes Lehrbuch d. anorg. Chem.*, v. H. Kolbe, S. 106.

112. U. S. Pat. No. 254,424, Feb. 28, 1882.

113. *Scien. Amer. Suppl.*, No. 873, Sept. 24, 1892.

114. *Electric Review*, New York, October, 1892.

115. Assoc. pr. l'avancement des Sciences; congrès à Marseille, Sept. 23, 1891. *Progrès médical*, t. xiv, 1891, p. 232.

116. See 81.

117. See 89.

118. See 82.

119. See 87.

120. See 33.

121. See 71.

122. *Scien. Amer.*, No. 222, April 3, 1880. Lines of Discovery in the History of Ozone, by Albert R. Leeds, Ph. D. Odling, *Monit. scientif.* (3), iii, 324.

123. See 104.

124. *Ber. über d. Verhandlgn. d. naturf. Ges. Basel*, iv, 58, 66. *Abhandlgn. d. II. Classe d. bayr. Akad. d. Wiss.*, III. Abtheilg., i, 257. Poggend. *Annal.*, l, 616.

125. *Untersuchungen über d. Sauerstoff*, Meissner. Hannover b. Hahn, 1863, S. 122.

126. *Annal. d. Chem. u. Pharm.*, cliv, 215.

127. *Annal. d. Chem. u. Pharm.*, clxxiv, 1.

128. *Ber. d. deutsch. Ges*, 1873, 1225.

129. *Annal d. Chem. u. Ph.*, clxxiv, 6.

130. Engler and Masse, *Annal. d. Chem. u. Phar.*, cliv, 215. Schoene, *ibid.*, cxcvi, 240.

131. Engler. Above cited (47), p. 58.

132. Dr. O. Ringk. Above cited (33), p. 15.

133. *N. Y. Staats-Zeitung*, April 27, 1890. Wilhelm Stoss.

134. *Revue internationale d'électrothérapie*, July, 1892. M. Herman, Du pouvoir bactéricide de l'ozone, *Annales de la Soc. médico-chir. de Liège.*

135. *Revue internationale d'électrothérapie*, February, 1892. *Progrès médical*, March 5, 1892.

136. Experiments as to the Value of Nascent Ozone in Certain Forms of Diseases of Children, with Demonstration of an Efficient Generator. Augustus Caillé, M. D. *Archives of Pædiatrics*, August, 1892.

137. Cholera; its Prevention and Treatment. Elmer Lee, A. M., M. D. *Chicago Clinical Review*, April, 1893. Hydrogen Peroxide in Contagious Diseases. Cyrus Edson, M. D. *The Doctor of Hygiene*, April, 1893.

138. *Encycl. Britann.*, 9th ed., vol. v, p. 417.

139. Lecture on Liquid Air. Royal Institution, Feb. 22, 1893.

140. Kingzett, 1888.

141. Baumann. *Ztschr. f. phys. Chem.*, v. Galezowski, *Rundschau*, 1889.

142. *Am. Therapist*, Jan. 15, 1893.

143. *Chem. News*, March 7, 1863.

A CASE OF QUININE AMAUROSIS,

WITH REMARKS.[*]

BY JOHN HERBERT CLAIBORNE, M. D.,
ADJUNCT PROFESSOR OF OPHTHALMOLOGY IN THE NEW YORK POLYCLINIC.

ON the 16th of December, 1891, I saw Mr. W. A. C. for the first time. He said he was totally blind and had been so for a week. The case was first seen by my father, Dr. J. H. Claiborne, Sr., of Petersburg, Va., who sent me the following note:

"I was called to see Mr. C. on the 8th of December at 8 A. M. Found him in bed, semi-comatose, aroused with difficulty; would only say 'Give me water,' and relapse into same condition. Pulse 100°, full and slow. Respiration slow. Skin moist and warm. Pupils dilated to utmost and not at all responsive to light. No resistance or evidence of sensibility on pulling lids apart. No history of case obtainable except that he retired the night before in usual health. Prescribed a placebo. During the day got a specimen of urine. Found some albumin and one cast. Nothing to justify the gravity of the symptoms. On December 9th he could be aroused more easily. Evidently the deafness was growing better, but no intelligent reply to inquiries and no improvement in the eyes. Became restless and unruly during the day and had to be put under restraint. Gave a few doses of morphine, bromide of potassium, and cannabis indica. Soon became more quiet. Slept the night through and awakened in the morning with hearing and intelligence restored but totally blind. Suspected some effusion at the base of the brain and put him on corrosive sublimate and tincture of cinchona. Advised him to see a specialist."

I therefore saw Mr. C. eight days after he was taken ill. For about two months and a half he had felt badly in New York. He then went to Richmond, Va., where he remained a week. During his stay he took on an average fifteen or twenty grains of quinine a day. This relieved him temporarily, but after he removed to Petersburg his trouble returned and he worked hard for several days opening his stock in a damp shop. He had been sleeping badly the entire time, and finally made up his mind to rest well one night. With this in view he poured the palm of his hand nearly full of two-grain pills of quinine and took them at once before leaving the store. He went home and got to bed early; after that he remembered nothing till he awoke several days afterward perfectly blind.

When I saw Mr. C. for the first time I found him with absolutely no light perception in either eye, either for daylight or for the strong focus of a biconvex lens. He complained, however, of seeing many-colored figures that would change their hue. The sensation of red prevailed. The pupils were fixed and moderately dilated, somewhat irregularly, indeed, the larger axis of the pupils being horizontal. The optic discs of the two eyes were pearl-white and the vessels much smaller than in health, although not so small as they subsequently became. The eyes occupied the position of divergence, and the patient had the typical stare of amaurosis. The sclera seemed preternaturally white, so that the patient presented a very uncanny appearance. I diagnosticated quinine amaurosis immediately and put him upon potassium iodide in saturated solution. I explained the nature of the case to him and gave a guarded prognosis. He insisted on keeping up some form of treatment although I told him that nothing would assist Nature in restoring vision.

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[*] Read before the New York County Medical Association, April 16, 1894.

I increased the dose up to fifty grains three times a day until December 21st, when he exhibited a genuine case of double iritis plastica, slight in intensity however. The pupils were now somewhat irregular and contracted. The iritis slowly improved; by December 31st the inflammation of the iris was entirely gone and the pupils were then moderately widely dilated by the atropine that had been used. On this date the patient said he could recognize the plates and cups at breakfast by a circle of light.

On December 28th I placed him again upon the bichloride of mercury and tincture of cinchona. He laid stress upon the fact that he could see things only by reflected light. Any intense light seemed to blind him completely. He could see a chair in my office when the light was diminished, but could not make it out when the full daylight was allowed to enter. He saw even better by reflected gaslight than by reflected daylight. He could pick up a piece of paper more readily by gaslight than by daylight. He improved so far as to see dimly objects even in another room, and one day when the sky was overcast he said he had read the signs in the street from the car window in coming to my office. During this entire time, although he possessed this much vision for reflected objects, he could not perceive the light of an Argand burner when focused directly into the pupil.

At the end of three months, without further improvement, he removed to the Massachusetts coast. During his stay there —several months—he contracted "pink eye," from which he recovered without further distress.

I saw Mr. C. twelve months after his first appearance in my office. His vision then consisted in the ability to occasionally see dim objects at a distance. He had no vision that was serviceable to him for employment. The optic nerves were then dead-white, and the blood-vessels in the two discs had become mere threads that could scarcely be traced after leaving the disc—in fact, a typical picture of quinine atrophy in the most advanced degree.

It is worthy of note that under the treatment of bichloride and cinchona he fattened so much that he could hardly get into his clothes. His appetite was enormous at the same time. Vision was about the same.

Dr. Knapp saw the patient in consultation on December 23, 1891, and concurred with me in the diagnosis of quinine amaurosis.

I myself have not seen the patient in twelve months. At his last visit to my office I found his condition the same as formerly. He could see indistinctly striking objects by diffused light, but not when looking directly at them. His peripheric vision seemed to be better than the central, and even that appeared to be fickle.

Dr. Knapp saw the patient on October 12, 1893, and kindly permits me to transcribe his notes.

"In the right eye he saw movements of the hand at six feet. With a candle the field of vision was elliptical. It was limited by five degrees beyond the fixation point upward and toward the nose, and extended as far as twenty degrees downward and toward the temple, producing an elliptical field. The vessels were very small.

"In the left eye he had perception of light; could recognize a candle at twenty feet. Vessels were almost obliterated; pupils irresponsive."

The deafness that accompanies quinine amaurosis had evidently disappeared when I saw Mr. C.; he did not complain of any, and certainly heard ordinary conversation with ease. I found both membrana tympani slightly drawn in and a trifle pale. Dr. Knapp found at the first examination that he could hear a watch in each ear at half an inch. There was no tinnitus when I saw him, nor was any observed by Dr. Knapp. There was some improvement in hearing after inflation. It is entirely consistent with the history of such cases that the deafness and tinnitus disappear.

The amount of quinine that may produce amaurosis is distinctly indeterminate, and doubtless, as Atkinson (*Journal of the American Medical Association*, September 28, 1889) says, depends largely on idiosyncrasy. H. C. Wood (quoted by Atkinson) saw temporary blindness result from a dose of twelve grains. As much as an ounce has been given with the result of temporary blindness and stupor followed by recovery (Taussig, *Medical Times*, April 23, 1864, quoted by Atkinson). Barlow (quoted by Atkinson) narrates a case of a lady with "severe congestive fever, who took forty grains of sulphate of quinine every two hours for ten doses," making four hundred grains. There was no injurious effect from the quinine, and she made a good recovery from the fever. Dr. Emile T. Sabal, of Jacksonville, Fla., narrated to me a case in which twenty grains of the sulphate administered to a young lady produced temporary total blindness. I myself have known a negro woman with tertian ague to take sixty grains at once by mistake and suffer no inconvenience of sight and hearing. There was not even any tinnitus in this case. It would be natural to suppose that physicians who live in the Southern States of our country would see many cases of quinine amaurosis. There is reason to suppose it is rarely seen there. Dr. Sabal, referred to above, has only seen one case in an experience of thirty years in Florida. My father, Dr. Claiborne, in an experience of forty years in tide-water Virginia, has seen only one case—the one reported herewith. It will be observed that the patient was not a native of the section, but was from New York. It is not improbable that a tolerance for quinine is established by a long sojourn in malarial regions. I believe the opposite also to be probable, that one born and raised in a malarial country may lose his tolerance for quinine by sojourn in a colder region.

In 1881 Dr. Emil Gruening (*Archives of Ophthalmology*, B. x, p. 81) compiled thirteen cases of quinine amaurosis, the first being that of Giacomini, quoted by Binz. Since that time the literature has been swelled considerably. Atkinson, in the *Journal of the American Medical Association*, quoted above, recapitulates the histories of forty-nine cases and follows with a masterly review of them. Dr. Alice Wakefield, in the *New York Polyclinic*, August, 1893, recites a case of quinine amaurosis, in which reference is made to Atkinson's compilation. She states that as many as fifty-five cases have been reported. Pische, in the *Medical News*, July 29, 1893, adds a case. This, together with

Dr. Wakefield's and mine, make fifty-eight. There are probably more.

The symptoms and signs of quinine amaurosis are marked and fairly constant. They are blindness, total or incomplete, which usually comes on suddenly; a dead, pearl-like pallor of the optic nerve, strikingly simulating the pallor of atrophy, accompanied by greatly contracted retinal vessels, both arteries and veins, with occasionally total disappearance of an artery or a vein; concentric or elliptical contraction (Knapp) of the field of vision. The long axis of the field is usually horizontal or slightly downward or outward. Dilatation of the pupils, which are irresponsive to light; partial color blindness in the field of vision. The color sense usually returns entirely. In my case there was distinct divergence of the visual lines. This was also observed by Diez, Browne, and Knapp. Roosa remarked nystagmus in a case of his; Knapp also. Dickinson found congestion of the retinal and chorioidal vessels and a distinct tumefaction of the disc. I found the edges of the optic disc in one eye slightly hazy.

In a communication presented to the College of Physicians and Surgeons, Philadelphia, November, 1890, Dr. G. E. de Schweinitz gave the results of some experiments made on dogs for the purpose of determining the lesion in quinine blindness. This was followed by a paper in 1891 in the *American Ophthalmological Society Transactions.* Similar work in this direction has been done by H. Bruner, *Ueber Chinin-Amaurosis*, Zurich, 1882. An extract of this work may be found in Nagel's *Jahresbericht.* (I am indebted to Dr. de Schweinitz for this reference.) Bruner's work and de Schweinitz's are quite similar, but the latter's is more exhaustive and in reality furnishes all the light we have upon the lesion in quinine amaurosis.

De Schweinitz gave quinine hypodermically to dogs in quantities of from one to four grains to the pound, with the result of producing blindness in from three to fourteen hours. The effect of the drug was obtained more readily by administering the bimuriate of quinine with the carbamide of urea. The symptoms of vomiting, staggering, and convulsions attended the blindness, with two exceptions—in these there were no symptoms attending the blindness.

The ophthalmoscopic picture was similar in every case to that seen in the human subject. The pupils in all cases were immovably dilated. In one case there was thrombosis of the central vein. Examination with the microscope showed that toxic doses of quinine could produce thrombosis of the central vein, and that neither neuritis nor atrophy, in the true sense of the word, was present in the animal longest blind (nearly a month), but that there appeared to be a species of œdema between the optic nerve and chiasm.

De Schweinitz then undertook additional experiments to settle four points:

1. Whether blindness could be produced in dogs by other salts than those used.
2. Whether the prolongation of quinine amaurosis would produce true atrophy.
3. Whether the production of thrombosis or embolism is to be expected in severe cases.
4. Whether the apparent degeneration of the cells of the cuneus found in the first experiments was the result of the hardening process or due to true lesion from the drug.

His subsequent experiments showed that blindness could be produced effectively by other salts of quinine, dissolved with the aid of tartaric acid or dilute hydrochloric acid.

In regard to the second proposition, he proved by microscopic examination that prolonged quinine blindness caused a true atrophy of the optic nerve, chiasm, and tracts.

In regard to the third proposition it was shown that thrombosis of the central vessels may be expected in severe cases.

He found, however, that the degeneration of the cells of the cuneus was due to the hardening process and not to the drug.

Let it be remembered that in the case I herewith report there was no thrombosis of any of the vessels, although the ultimate result shows the case to be the most severe on record.

From the study of this subject the following conclusions may be drawn:

1. Quinine in toxic doses may produce blindness.
2. The toxic dose is distinctly indeterminate.
3. The duration of the amaurosis varies largely.
4. The field of vision remains contracted.
5. Central vision usually returns to the normal.
6. There is color blindness at first; the color perception is ultimately restored within the central field.
7. The ophthalmoscopic picture is that of white atrophy.
8. Experiments on dogs show that there is atrophy of the entire optic tract.
9. The same experiments show that the cells of the cuneus are probably not affected.
10. Treatment is of no avail.

10 East Twenty-eighth Street.

REPORT OF A CASE OF BULLET WOUND, WITH TREPHINING.

By JOHN FRANCIS BURNS, M. D.,
VISITING SURGEON TO ST. JOHN'S HOSPITAL, LONG ISLAND CITY.

W. L., aged nineteen years, male, was brought by ambulance to the hospital one evening. Examination revealed a bullet wound of the left temporal region, and Dr. Bumster and myself could find no powder marks of the surrounding region. The young man was very violent and had been drinking. I could find no aperture of exit, and, it being an open question whether the bullet had entered the brain (the temporal muscle in the fossæ at this point being very thick), I exposed the temporal bone by an elliptical incision. This revealed a circular opening evidently made by a bullet of small caliber. I then gently insinuated a Nélaton's porcelain-tipped probe through the opening; it passed by its own weight for about two inches, when something hard was met. I then, with the assistance of Dr. Bumster, trephined with a three-quarter-inch crown trephine, including half the circumference of the aperture. Another probing with the enlarged opening confirmed the original conclusion of "foreign body." I carefully introduced a suitable forceps and removed a large section of the circle of bone which had been driven from the skull into the brain tissue. The tract ended here and I could find no trace of the bullet. Noticing some clotted blood posteriorly to the channel mentioned, I incised the dura and carefully irrigated the neighborhood of the wound. This brought away four other smaller fragments of bone which completed the circle driven in. I then allowed the probe to follow this channel toward the tentorium cerebelli somewhat obliquely upward and backward and the channel ended.

The large fragment of bone which I removed anteriorly was very much stained from the lead bullet. I gently irrigated the channels, which removed some disintegrated brain substance, established drainage, and dressed the wound antiseptically. The boy rallied well from the ether and made a speedy recovery devoid of complications. He had much delirium for the first few days—a combination of whisky and laceration of brain substance—but manifested no other symptoms which could be attributed to nervous lesions. When questioned as to the manner in which the injury was inflicted, he either denied all knowledge of the occurrence or said, "*They* did it." The boy finally recovered without any loss of function and seemed the same as he always had been. I informed the coroner of the case and careful official inquiry showed that the wound was self-inflicted, eye-witnesses testifying to the occurrence.

This case presents many more features illustrating points in connection with bullet wounds generally:

1. That the bullet should have taken one course and the large fragment another, or did the bullet afterward drop out? Such cases have been mentioned.

2. That the fragment of bone should have been so deeply stained with the lead and yet no powder marks present. It is easy to see how wrong deductions might be made by a surgeon from these facts.

3. The fact of the absence of powder marks and the wound being in the left temporal region of a right-handed man is often a disputed point. Here we have a living example.

4. It also shows what care must be exercised in accepting the ante-mortem statements of such persons. This boy would be considered very rational by nine out of ten persons when he told me "*They* did it." He might as well have named Tommy, Jimmie, or Dannie.

5. The region traversed by the bullet, as near as I am able to locate without dissection, was the seat of the most important centers in the brain, but the bullet must have passed right between them, as the boy has no lesion left to indicate their involvement.

I hope to be able to watch this case in the future, as it certainly will be interesting.

426 JACKSON AVENUE, *April 15, 1894.*

The Medico-chirurgical College, of Philadelphia.—Appointments have recently been made as follows: Dr. Isaac Ott, of Easton, Pa., professor of physiology; Dr. William E. Hughes, professor of clinical medicine; Dr. Albert E. Roussel, assistant professor of clinical medicine and of practice of medicine; Dr. Charles W. Burr, clinical professor of nervous diseases; Dr. William C. Hollepeter, clinical professor of diseases of children; Dr. Arthur H. Cleveland, clinical professor of laryngology; Dr. Edward B. Gleason, clinical professor of otology; and Dr. William Blair Stewart, lecturer in therapeutics.

POTASSIUM PERMANGANATE AND ZINC SULPHATE AS INJECTION IN GONORRHŒA.*

By JOSEPH D. FARRAR, M. D.,
BALTIMORE.

INJECTIONS in gonorrhœa should be made with great care. The germs of this disease are in a great part lodged in the submucous tissues and beyond the contact of any agent intended for their destruction. Usually, from the tenth to the twentieth day after suppuration is noticed, if the foregoing measures have been faithfully carried out, the character of the discharge is changed from the yellow, thick, and profuse pus of acute gonorrhœa to the scant, whitish milky fluid of the later stages of the inflammation, and with this the painful symptoms have also disappeared. The urethral syringe should be selected with great care. It should contain about two drachms, have a conical nozzle, and can be used with one hand. The long-nozzled, pointed syringe should never be employed. In its use the point strikes against the mucous membrane, causing an exaggeration of the inflammatory process here, not infrequently resulting in stricture. An injection should be performed as follows, and each patient should be thoroughly instructed before he is intrusted with its employment upon himself.

The bladder should not be emptied. The bottle containing the injection fluid should be shaken, and a quantity sufficient to fill the syringe emptied into a cup and drawn into the instrument as needed. The syringe is now held with the point, and the piston pushed up until the air which may have entered with the fluid is expelled. A small quantity of oil or vaseline is rubbed upon the tip of the syringe. The patient should sit upon the edge of a hard chair, the buttocks projecting slightly over it, the feet separated and the thighs relaxed. In this way all pressure or tension upon the perineal muscles is removed, and the injected fluid finds its way backward to a sufficient depth, or the patient lies down, the glans penis is held between the fingers of the left hand, and the index finger is carried through the ring on the end of the piston, while the cylinder is grasped between the thumb and middle finger. The conical end of the syringe is now introduced into the meatus, and pressed in with sufficient firmness to prevent the escape of the fluid while the contents of the cylinder are slowly emptied into the urethra. In making an injection the urethra should be well distended, so that all parts of the mucous surface, as well as the follicles, may be brought in contact with the fluid. After holding the injection in the urethra for from three to five minutes it may be allowed to run out and the patient directed to empty his bladder. A second quantity, about a third less than the first, is again injected. These injections should be used night and morning and, if convenient, at noon. In the cases treated in the surgical dispensary of the Baltimore Medical College I used a quarter of a grain of sulphate of zinc and an eighth of a grain of permanganate of potassium to the fluidrachm for injections, with mucilage of acacia and distilled water as a menstruum. When these drugs are given together most excellent results follow their use. From June 15, 1893, up to March 20, 1894, one hundred and eleven cases have been treated in the surgical dispensary, and of this number eighty-seven cases by the method mentioned, with a restricted diet, in which a cure was effected in from three to four weeks.

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* Read before the Baltimore Medical Association, April 9, 1894.

In the cases thus treated no unpleasant complications arose, as after improper use of injections. Some authors advise the use of the internal treatment altogether.

They are contraindicated in the acute inflammatory and suppurative stages of this disease.

Topical remedies are divided into three classes:

1. Those which, when strong enough to exert a sufficient germicidal action, are locally so irritating as to be harmful or unbearable. This class includes nitrate of silver, carbolic acid, chloride of zinc, iodine, chloral, salicylic acid, and creosote, all of which have been faithfully tried in many cases and by competent surgeons, the concurrent testimony being that when used in sufficient strength to sterilize the discharges they produce an amount of irritation and swelling, ardor urinæ, chordee, and even exceptionally urethral ulceration that far outweighs any advantage to be derived from their antiseptic properties.

2. Those which are such feeble antiseptic agents that they can not be depended upon to destroy all the bacteria found in urethral discharges. Among these may be mentioned resorcin, thallin, quinine, acetate of zinc, lanolin, sulphur waters, tannin, alum, hydronaphthol, and cadmium sulphate. The clinical evidence and experimental evidence coincide as to most of these drugs. Each has had its more or less enthusiastic advocates, but when given a wider trial has been found disappointing, while bacteriologists have shown that the germicidal action is either limited to a very few varieties of bacteria or is slow and uncertain.

3. The third class includes a number of agents which, while open to the same objection of too feeble or too limited antiseptic action, have the additional drawback of insolubility in ordinary media and of occasionally becoming mechanically irritating from the formation of concretions. Among these are iodoform, calomel, bismuth subnitrate, oxide of zinc, and other insoluble powders. It must not be supposed that this list is intended to be even approximately complete. It might be increased literally a hundredfold, and nothing could better demonstrate the absurdity of empirical methods than the dozen of ridiculous formulæ and the hundreds of useless drugs which have from time to time been recommended for use in the various forms of urethritis. So far, however, as they are antiseptics, they would be found in one or the other of the above classes. There are certain agents which have been purposely omitted from the classification, but which, as ordinarily employed, might with considerable propriety have been included. These are corrosive sublimate, sulphocarbolate of zinc, boric acid, peroxide of hydrogen, and salicylate of bismuth in various combinations, all of which have practical value in attempting by topical treatment to secure asepsis in an inflamed urethra. They may be used in different proportions and either singly or in combination.

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THE LEAVEN OF SCIENCE.

At the dedication of the Wistar Institute of Anatomy and Biology of the University of Pennsylvania, on May 21st, a report of which is published in the *University Medical Magazine* for June, Dr. William Osler, of Baltimore, delivered the principal address. It was a fitting tribute to the memory of the men who have from time to time occupied the chair of anatomy in that university. Dr. Osler closed his address with substantially the following remarks: There was great need, he said, in the colleges of this country of men who were thinkers as well as workers—men with ideas, and men whose energies were not sapped in the treadmill of the class-room. In the laboratories of the institute opportunities would be given for this higher sort of university work. The conditions about us were changing rapidly; in the older States utility was no longer regarded as the test of fitness, and the value of the intellectual life had risen enormously in every department. The "leaven of science" gave to men habits of mental accuracy and modes of thought which enlarged the mental vision and strengthened the "sinews of the understanding." Science had done much, and would do still more, to alleviate the unhappy condition in which so many millions of our fellow-creatures lived, and in no way more than in mitigating some of the horrors of disease. What, after all, Dr. Osler asked, was education but a subtle, slowly effected change, due to the action upon us of "the externals," of the written record of the great minds of all ages, of the beautiful and harmonious surroundings of Nature and of art, and of the lives, good or ill, of our fellows? These alone educated us, these alone molded the developing mind. These influences would lead successive generations of youth from matriculation to graduation in the special school: The complex, varied influences of art, of science, and of charity—of art, the highest development of which could come only with a sustaining love for ideals; of science, the cold logic of which kept the mind independent and free from the toils of self-deception and half-knowledge; of charity, in which we of the medical profession, to walk worthily, must live and move and have our being.

MINOR PARAGRAPHS.

RHYTHMICAL TRACTIONS ON THE TONGUE AS A MEANS OF RESUSCITATION.

M. Laborde, of Paris, has given much attention to the procedure of making rhythmical tractions on the tongue as a means of reviving the respiratory function in cases of suspended animation—such as asphyxia neonatorum, asphyxia from submersion or from the inhalation of poisonous gases, and apparent death occurring from the action of anæsthetics. As the *Gazette médicale de Paris* remarks, he has made the method quite his own and has popularized its use. He has published a work on it, with the somewhat startling title of *The Physiological Treatment of Death.* At a recent meeting of the *Société de biologie*, a report of which appears in the *Union médicale* for May 22d, M. Laborde explained the efficacy of the manœuvre as due to nervous action through the medium of the glosso-pharyngeal and the superior lingual nerves, whereby the respiratory center of the bulb, which is very tenacious of its irritability, is roused to action.

MORE NEWSPAPER MEDICINE.

THE politician who would not allow such a little thing as the constitution to "stand between friends" was a stickler in comparison with the author of a dispatch from Paterson, N. J., published in the *Sun* on Friday of last week, concerning a woman who, having been badly frightened by a stroke of lightning, called her daughter's attention to her trembling hands. "As she held them up to look at them herself," the dispatch goes on to say, "one of her eyes fell out into her lap. The other eye fell back into its socket and appeared to be lost in her head." It is added that the doctor in the case "says she has been afflicted with tumor of the nose, and that the fright snapped the muscles of the eyes and the balls became dislodged. The eyeball that fell back into her head is coming back in its place, and to-day it can be partly seen through the small opening of the eyelids." The final fate of the eye that dropped into her lap is not stated.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 26, 1894:

DISEASES.	Week ending June 19.		Week ending June 26.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	6	1	12	7
Scarlet fever	114	17	18	14
Cerebro-spinal meningitis	4	4	0	1
Measles	131	12	90	7
Diphtheria	244	60	254	48
Small-pox	15	3	18	1
Tuberculosis	108	84	106	116

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 17 to June 23, 1894:*

EDIE, GUY L., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect on or about July 1, 1894.

GIBSON, JOSEPH R., Major and Surgeon. The leave of absence granted on surgeon's certificate of disability is extended three months on surgeon's certificate of disability.

MERIWETHER, FRANK T., First Lieutenant and Assistant Surgeon, is granted leave of absence on surgeon's certificate of disability, with permission to leave the limits of the department.

MERRILL, JAMES C., Major and Surgeon, is relieved from duty in the office of the Surgeon General, to take effect July 1, 1894, and ordered to report in person to the commanding officer, Fort Sherman, Idaho, for duty at that station. He is also granted leave of absence for three months, to take effect July 1, 1894.

Society Meetings for the Coming Week:

TUESDAY, *July 3d:* Medical Society of the County of Broome (quarterly), N. Y.; Union, N. J., County Medical Society (quarterly); Chittenden, Vt., County Medical Society.

THURSDAY, *July 5th:* Washington, Vt., County Medical Society.

Proceedings of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of Tuesday, June 5, 1894.

The President, Dr. EDWARD E. FISHER, in the Chair.

Tabes with Homonymous Hemianopsia.—Dr. FREDERICK PETERSON presented a man, aged fifty, married, a bricklayer, without hereditary stain. He had had a chancre twenty-eight years before. Four years ago he had first noticed that his vision was growing dim, although eighteen years ago he had had a transient diplopia for three weeks. He had been under observation at the Vanderbilt Clinic for a year, during which time there had been little progress in the main features of the case. There were absence of the knee-jerks, the Romberg symptom, sharp shooting pains in the legs, principally the right leg, dull pain in the back, impaired muscular sense, slowness of micturition, Argyll-Robertson pupils, and some optic atrophy. He had never had crises, and there was no trophic disturbance, girdle sensation, or anæsthesia. In April, 1893, he had noticed his hemianopsia for the first time. He thought it came on suddenly, but there was no accompaniment in the way of headache, faintness, loss of consciousness, or other disagreeable symptom. The left visual field was limited to the upper nasal quadrant; the right, to the upper temporal quadrant. Dr. Peterson said that Gowers had described a case of locomotor ataxia with double temporal hemianopsia, but in a cursory examination of the literature on the subject he had been unable to find another reference to a case of this kind.

Dr. WILBUR B. MARPLE said that when he had examined the patient's eyes, in July, 1893, he had found the condition described by Dr. Peterson—namely, the left field limited to the upper nasal quadrant, and the right field to the upper temporal quadrant, excepting for form, which extended over the upper nasal side. Over this area the patient recognized motions of objects, but the recognition of colors, including white, was limited to the temporal quadrant. At a second examination, made on June 1, 1894, the same condition of affairs had been found, but the field of the right eye was somewhat more contracted, so as to be more exactly quadrantic. Dr. Marple said he had recently seen a man who, while coming up from a cellar, had struck the top of his head violently against a projecting beam. He was unconscious for some time, and afterward there was atrophy of the optic nerve, with lateral hemianopsia, color defects, etc. His ocular symptoms had probably been due to atrophy of the nerve, which had taken place in this peculiar manner. This same explanation would perhaps apply in the case shown by Dr. Peterson.

Dr. WILLIAM M. LESZYNSKY said he had never seen a case of tabes with symptoms exactly similar to those in Dr. Peterson's patient. The fact that both eyes were affected made it rather difficult to locate the lesion. He was inclined to ascribe the conditions to a peculiar form of atrophy of the optic nerves.

The PRESIDENT said that, as suggested by Dr. Peterson, the peculiar conditions in this case might be due to changes in the vessel walls, probably a syphilitic endarteritis. He called attention to the fact that the optic atrophy had been progressing very slowly.

Paralysis Agitans with Tremor.—Dr. Peterson presented also a man, aged sixty, a wheelwright. He had first come under observation in May, 1894. He had the characteristic mask-like rigidity of the face, and the attitude of Parkinson's disease was marked, with the stooping shoulders, bent back, and crooked elbows and knees. The hands and fingers had the characteristic position, but there was no tremor anywhere in the extremities or head. His voice had the monotony and something of the festination of the speech of paralysis agitans. There was at times a sort of propulsion in his gait.

Dr. Leszynsky said he had seen two cases similar to the one presented by Dr. Peterson. One of these he had kept under observation for a long time, and in that instance the tremor had developed late in the course of the disease. The speaker referred to the fact that recent investigations had shown that the pathological changes met with in paralysis agitans were identical with those found in senility.

Dr. Edward B. Angell, of Rochester, called attention to the fact that typical cases of this disease were rarely met with.

Bradycardia.—Dr. A. D. Rockwell showed a young man who had been under his observation for some months, and during that time his pulse had never been found to be above forty-nine a minute. The patient was in fairly good health, although he suffered from some digestive trouble and was very nervous. A strong galvanic current applied directly to the neck reduced the pulse to forty-three.

The President said that during the past year he had had a patient under his care whose pulse averaged about fifty; occasionally it rose as high as sixty. The man had a constant feeling of dread, and was somewhat neurasthenic.

Dr. Leszynsky said that in one case of bradycardia that had come under his observation the pulse-rate had been 32, and the patient had suddenly gone into collapse. He had seen a number of instances of slow pulse in patients who suffered from the grippe; in these cases the slow pulse had been accompanied by high temperature. During the past winter he had seen a patient whose pulse was 84 and the temperature in the mouth 104·5°; the pulse never went above 90. In a case of exophthalmic goître recently under his care the galvanic current (four or five milliampères) applied in the region of the cervical sympathetic had reduced the pulse from 120 to 100.

Dr. Angell said that in gouty individuals or in those suffering from lithæmia or neurasthenia there might be a slow pulse-rate. A number of such instances had come under his observation.

The President said he had seldom been able to moderate the heart-beat by the application of the galvanic current to the neck, either in ordinary cases or in exophthalmic goître.

Dr. Rockwell said that, while his patient presented no evidence of lithæmia, he was certainly neurasthenic. He had never seen any good results follow such mild applications of electricity as those mentioned by Dr. Leszynsky. It was seldom that a patient was able to bear more than thirty-five or forty milliampères applied to the neck; this patient, however, could bear seventy-five milliampères, and it was only when that strength was used that the pulse-rate was at all affected. In exophthalmic goître he had frequently seen the pulse reduced very decidedly by the application of the galvanic current; other cases, again, were not affected by it at all.

Microscopic Sections showing Weigert's New Neuroglia Stain.—These sections had been prepared by Professor C. Weigert and were exhibited by Dr. William J. Morton.

An Improved High-tension Coil was exhibited by Dr. Rockwell. The interesting feature of this electrical apparatus, which the speaker said he had presented in a rather crude form about a year before, was the fact that he had in a single coil all the various lengths and thicknesses of wire which were now found so essential in the electrical treatment of certain diseases, especially in gynæcology and neurology. By means of this apparatus the current could be increased from absolute zero to the maximum required.

Dr. Leszynsky said the majority of faradaic machines were so made that we could not graduate the current from zero, and on that account it was too strong in certain instances, not only for the purpose of treatment, but also for that of diagnosis.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

SURGICAL SECTION.

Meeting of April 13, 1894.

(*Concluded from page 727.*)

Demonstration of a New Surgical Engine.—Dr. M. H. Cryer exhibited an improved surgical engine, with its various shaped drills, burrs, trephines, and guards, used in cutting bone for surgical operations.

The drills were made with three spiral blades, giving them the appearance somewhat similar to a twist drill. The effectiveness of these blades was enormously increased by a spiral screw, forty-four threads to the inch cut around the blades of the instrument. This device necessarily added forty-four teeth to the inch upon the edge of each cutting blade. The individual teeth were so arranged with reference to one another that the cut made by one tooth was overlapped by that of the one next following. These instruments were used for drilling into bone and opening the medullary canal, as in the case of osteomyelitis, or in removing sequestra which had formed in the long bones. After the bone had been cut down upon and the cloaca found, it was opened up with the spiral drill, and by forcing the instrument laterally the side portion would cut the intervening bone away, thus making a groove down on the dead bone. If the opening thus made was not large enough, burrs of various sizes, made on the same principle as the drills by increasing the number of spiral tooth blades in definite relation to the size of the cutting instrument required, could be used to enlarge the groove to any desired size. These burrs were very useful for removing the dead or abnormal bone, uncovering nerve canals, for operating on the bony structures in relation to the ear, or in the nasal chamber. For the latter work Dr. Cryer exhibited a lighter engine made on the same principle as the large one, except that it was made to be turned by the foot of the operator.

The most important instruments exhibited had been those used for making a section of the brain case. These were of two characters, the circular saw and the spiral osteotome. The circular saw was an inch in diameter and a sixteenth of an inch in thickness, having a guard attached to the end of the hand-piece to regulate the desired depth to be cut. This instrument had been successfully used in an operation for the removal of the Gasserian ganglion. It had cut with great rapidity, but as the brain cases varied in thickness, the operation had to be completed with mallet and chisel. The spiral osteotome had overcome this objection, the cutting portion being made on the principle of the drills already described. It was half an inch in length and an eighth of an inch in diameter. The point of the instrument when in use was guarded by a rounded, button-like attachment connected with the nose of the hand-piece by means of a shank and collar. The free end of the burr was doweled into a seat in the guard in which it revolved; this steadied the whole instrument when in use, giving added rigidity to the burr shank and holding the burr and guard in permanent relation to each other. The principle involved in the instrument described was simply that of a saw cutting in a line with the axis of the shaft of the burr and not at right angles to it, as in the circular saw. Such an arrangement allowed of cutting in any direction and upon curved lines. This was especially valuable in resection of the brain case, inasmuch as fenestræ of any desired shape or size might be speedily made.

In operating for the removal of a portion of the brain case with this instrument after a division of the soft tissue by the scalpel, an opening five sixteenths of an inch in diameter was made by a trephine mounted in the engine hand-piece; it was passed completely through both tables of the skull and a button of bone removed. There was no danger of injuring the dura with the trephine if it was carefully used. The opening thus made afforded a means of entrance for the osteotome, which, with its protecting guard, was next inserted, and the section made along the line previously determined by running the engine at a high rate of speed and forcing the bit laterally in the direction desired. The button-like guard at the point of the osteotome prevented injury to the dura, which was pressed or directed away by it from its attachment in the line of the cut as the instrument progressed.

Dr. Cryer made several demonstrations on the bones and head of the cadaver, showing the rapidity with which bone could be divided and various operations performed, such as drilling and cutting bone, and uncovering the nerves in the superior and inferior maxillæ. The safety with which the operation in opening the brain case had been done without injury to the dura was very gratifying. He said that at a meeting of the Philadelphia County Medical Society, held February 14, 1894, during the discussion of an operation for the removal of the Gasserian ganglion by Dr. W. W. Keen, in which this engine had, in his opinion, been successfully used, Dr. John B. Roberts had made the following remarks: "With regard to this elaborate instrument, it seems to work very satisfactorily, yet for my own work I should rather use a sharp chisel with my own hand and my own mallet than any mechanical device. These are apt to get out of order and must be at some place where they can be kept in order. What we want to do is to train our own hands to do the work, and not be dependent upon any mechanical device." This statement had indicated to Dr. Cryer an erroneous position with regard to this class of instruments, which it seemed to him ought not to go uncorrected.

He was a little fearful that surgery would take a back seat if all its mechanical devices were done away with. He heartily agreed with Dr. Roberts when he said, "What we want is to train our hands to do the work," and he would strongly advocate the highest possible attainment of manual skill as a necessary prerequisite in the performance of all surgical operations; but, continued the speaker, when he adds that we should "not be dependent upon any mechanical device," he was inclined to take issue with him on the ground that his statement was contradictory from the very fact that he himself advocated the use of a mechanical device, albeit a very crude one, in the shape of a mallet and chisel. This machine had now been so simplified and perfected that there was little or no danger of its getting out of order. It was not nearly so complicated as the most simple sewing machine, yet men and women ran this, and who would say, Go back to the ordinary needle and do away with the sewing machine?

Dr. L. W. Steinbach said he had had the pleasure of having Dr. Cryer perform one of those operations for him recently in a case presenting some difficulties from the fact that repeated operations had been performed on the inferior maxillary portion of the fifth nerve, and he had been delighted with the working of the engine, so far as the bone-cutting had been concerned, but he believed that the amount of blood lost was greater than at the previous operations, where the ordinary chisel and mallet had been employed. As a mechanical device he could praise the instrument, and he did not wonder that Dr. Cryer was enthusiastic, although he could not agree with him that it was a great advantage to a surgeon to learn to use such a complicated machine. It might be of much advantage in a hospital where much work was done.

Dr. Roberts said he had been very much interested in trephining with the surgical engine some fifteen years ago, and had written an article on the subject after experiments with a flat-headed burr. He now preferred the chisel and mallet for opening the skull, and used a small sharp chisel shaped like an osteotome.

Dr. J. William White said he had never had the advantage of seeing this particular instrument used in actual operations, but he could see no theoretical reason why it should not be employed with great advantage to surgeon and patient. He supposed there was no surgeon who did more trephining than Mr. Horsley, of London. He had noticed last summer that Mr. Horsley had employed a powerful electric engine in which he had used a burr or saw, and could cut out a section of bone with a great saving of time. It looked to the speaker like a dangerous thing, and it had been remarked that there was force enough to drive a part through a man had any portion broken loose. With it, however, Mr. Horsley had greatly reduced the time required for exposing a brain tumor, and did the work with great delicacy and with much less shock (if shock was the result of jarring and concussion of the brain) during an operation than would be inflicted by a mallet and chisel. He, however, had cut from without inward. This was the first time the speaker had seen a machine cutting from within outward. It had been observed here that it actually pushed away the artery from the bone without injury. He could not understand why such an operation should be attended with any more loss of blood than by the usual methods, and he did not know why Dr. Steinbach's operation should have been any more bloody. Of course, this view was purely theoretical; but as he had found a surgeon like Mr. Horsley, who was one of the most expert operators on the skull, using a machine which had seemed to him of distinctly less advantage than that, the action of which had just been demonstrated, he believed this engine had a future, especially for use in the hospitals, either for nerve resection through bone or for work upon the brain.

Dr. M. H. Cryer said he had not much to say, for the demonstration had been the principal part, but he was inclined to answer his friend Dr. Steinbach. He believed from his experience and the experience of others, that in second, third, or fourth operations on the same part there was generally more hæmorrhage, for the simple reason that the small arteries were dilated, and small capillaries had become arteries through ligating the primary artery, and were therefore more difficult to control.

As to the engine getting out of order, the liability was very slight. It could be run by a child. It was much more simple than the sewing machine, and he should pity the doctor who could not use this engine. Of course, every device placed upon it made it a little more complicated, and it required study and practice to know how to work it. But if he had to remove a portion of the brain case he would not think of using any other instrument at the present time.

The Marriage of Syphilitics.—Dr. William G. Porter read a paper with this title, in which he said that perhaps no more important or interesting question could have been submitted for discussion than that of the marriage of syphilitics, and he confessed that he approached its consideration with an amount of diffidence which he would not have supposed to be possible some years ago. It would be very easy to dispose of the whole question by giving to patients who had been afflicted with syphilis, and who were contemplating matrimony, the celebrated advice of Mr. Punch to those about to be married, "*Don't!*"

But in regard to this question we had a solemn duty to perform; on our decision might depend the future happiness and health, not only of the patient, but that of an innocent and virtuous woman and of children yet unborn.

The subject was so large in all its bearings that it would be simply impossible for him to more than outline some of its more salient points. In approaching the subject we must consider first *the patient.*

If we forbade him to marry, and he took our advice, we condemned him to perpetual celibacy—we robbed him of all the joys of matrimony, of possible paternity.

If we were right in our judgment, we had nothing with which to reproach ourselves.

But if we had acted unadvisedly; if he was really incapable of transmitting the disease to others; if he was capable of procreating healthy children; if he had a long life of health and usefulness before him; if, in other words, he was cured—we had done him a lasting injury, we had blighted his life, we had robbed the state of a citizen who would in all probability have been more useful married than single.

On the other hand, if we advised our patient who was or had been syphilitic that he could safely marry, and he followed our advice and infected his wife or procreated syphilitic children, we not only injured him, but inflicted irreparable injury on an innocent wife and helpless children.

Were there any rules, the speaker asked, which might guide us in the determination of this most important question? In the limited time at their disposal it would be impossible to offer the proofs of all the statements he would make; he would therefore endeavor to limit himself to propositions which he thought all could indorse.

In the first place, then, he would say that syphilis might be classified into three varieties—viz., the benignant, the moderate, and the malignant.

He supposed that, *occasionally*, all had seen cases of primary syphilis which had been followed by an exceedingly moderate amount of secondary symptoms, and then, almost without treatment, by perfect recovery and the absence of further manifestations; to these he would apply the name of benignant.

By moderate syphilis he meant those ordinary cases in which the disease ran through its various stages without severe symptoms—perfectly responsive to treatment, generally controlled by it, but which it might take many months or perhaps some years to cure.

By malignant syphilis he meant those cases which were severe from the start, in which the earliest secondary symptom might be a rupia with a profound cachexia, or immediately on the disappearance of the chancre, or even sometimes before it had disappeared, the nervous system of the patient might be profoundly affected.

Recognizing these three varieties, his next proposition was that all three forms were generally curable: the first exhausting itself, the two latter requiring the treatment of the *skillful* physician to overcome them, for there was no disease which responded more rapidly to proper treatment, or showed worse results when improperly treated, than syphilis.

We knew that syphilis was curable from the fact that many patients remained indefinitely without a recurrence of symptoms, and, more than all that, they not infrequently contracted it a second time. But up to the present time no means had been discovered by which we could say absolutely to any individual patient, "You are cured; you will never have a return of this disease unless you contract it again." Because of this, many writers on syphilis maintained that, as we could never say absolutely that a patient was cured, we had no moral right to advise him to take the chances of matrimony; that we could never tell, even after the lapse of years, when a relapse might occur, and the patient who had supposed himself to be cured might transmit to his posterity this terrible disease. It seemed to him that, if there was one thing established in medicine, it was the power of medical treatment over the manifestations of syphilis. Who had not seen symptoms disappear under treatment almost as if by magic, and cases apparently the most hopeless in which health had been restored? and yet it happened to all occasionally to see cases in which, in spite of systematic and long-continued treatment, there was persistent relapse. The patients were not really ill; they went about attending to business and the affairs of life as usual; and yet we knew and they knew that they were not well; the slightest indiscretion was sure to produce a temporary relapse, and so it went on for years and years. He thought that all who had been in practice for twenty-five years or more must recognize the fact that we did not see nearly as many severe cases of syphilis as we formerly had done, and yet, if we considered the numberless pathological conditions which it most assuredly caused, we must admit that it was still a most serious affection, and one which resulted much more frequently in death than was generally supposed.

Under what, if any, circumstances were we justified in informing a patient who had suffered from this disease that it would be safe for him to marry?

In the first place, marriage should be absolutely forbidden to any patient who presented, at the time he consulted us, any of the symptoms of syphilis—primary, secondary, or tertiary. Dr. Porter then quoted from the master on this subject—Fournier:

"What, then, is marriage in its completeness, gentlemen? Marriage is not only an affair of sentiment, of passion, of convenience, and of interest. To consider it from a standpoint more practical and at the same time more elevated, marriage is an association freely entered into, where each contracting party is pledged to bring in good faith a share of health and physical vigor, with the view of co-operating, on the one hand, for the material prosperity of the family, and, on the other hand, for the raising of children, the supreme and sacred end of every union.

"Now, what in this case, I ask you, will be the share contributed to the partnership by a husband syphilitic, and not cured of his syphilis? His share will be that of a health compromised, hypothecated, burdened with a debt hereafter due to the pox, that pitiless creditor.

"On account of the pox it may happen that this man may experience one day or another such and such serious affections which will ruin his health, such and such an infirmity which will render him incapable of work, incapable of earning his daily bread; and then what will become of the family of which this man is the recognized support? What will become of his wife? What will become of his children?

"On account of the pox also this man may die. What may happen, he being dead, to his wife and to these children?

"Is it admissible, then, that a man should think of creating for himself a family when he is liable to fail this family? Is it admissible, is it right, is it moral that a man should dream of having a wife and children when he offers the possible prospect of widowhood to this wife, of orphanage to these children, of poverty to this family? No, a hundred times No!

"Also, and I do not hesitate to say it, the man who is syphilitic and not cured of his syphilis, and fears not, nevertheless, to append his signature to the marriage contract, commits at this moment a base act, an act immoral and corrupt, an act which good people will be unanimous in condemning."

In the second place, Dr. Porter went on to say, marriage should be absolutely forbidden to all syphilitic patients who had not been subjected to a most thorough, complete, and prolonged treatment.

And finally, in the third place, before sanctioning the marriage of a syphilitic, the requirement of a sufficient treatment having been fulfilled, the physician should be satisfied that he was in perfect health, and that he had had no symptoms, even suspicions, of syphilis for a period of at least two years.

Under these circumstances and with these limitations he had no hesitation in telling patients that he thought they were reasonably safe in marrying, and he had never yet had reason to regret the advice which he had given.

Dr. J. **William White** said that he thought he agreed to the general conclusions of Dr. Porter's paper. The three forms he had mentioned were commonly met with in practice. It was certainly to-day more benign than when many of them had begun to practice medicine. It was now rare to see the grave variety in which the primary symptoms were soon followed by the tertiary phenomena. If it was true that syphilis was a milder disease than it used to be, it was milder probably in every direction, and we might feel more encouraged than our predecessors had been to authorize the marriage of syphilitics. It had been many years before Dr. Agnew could be brought to say positively that he approved of the marriage of any of his syphilitic patients, and it might be that this slowness on his part had been due to the sort of experience with syphilis that younger men had not had.

It was desirable to formulate some safe rule as to the permission which we were asked to give or withhold in cases of syphilitics intending marriage. The writers who have said that, as we did not know when a given patient was cured, and, as we could not apply any test which established this, we could not, therefore, give our consent, confuse the future danger of the individual with the possible danger to others, including his offspring. He thought it was a confusion which prevailed to a certain extent in the profession, and, to a very wide extent, in the laity. It was unfortunately true that we were not able to tell a man that he himself would not have further symptoms of syphilis. We might place the percentage of cures very high, and he himself thought that most of us who treated syphilis intelligently got from ninety to ninety-five per cent. of cures in the average line of cases. But we could not select from the hundred cases the five or ten cases that we had failed to cure, and forbid marriage. Nor could we expect to do so until bacteriology had done more for us than it had up to the present. But that had very little bearing, he thought, on the question of marriage. Because, as a matter of fact, after a certain time had elapsed, particularly after the combination of circumstances which existed where a patient had had moderate syphilis with efficient treatment, and had gone for a time, two years, say, without symptoms, he thought we were very safe in saying there was little danger to others. Personally, he would have the same, but no greater, objection to giving his consent to the marriage of a man with tertiary syphilis as to that of a man with strongly marked tubercular predisposition or with mental disease. He thought the risk of transmission in the two last named would be far greater than if he had had gumma, rupia, or periosteal nodes. He was not aware of any instance, satisfactory to his mind, in which tertiary syphilis had been transmitted either to any individual or to offspring. The reported cases were generally defective in some important point. It was difficult, where two persons were concerned, particularly in instances of heredity, to be quite sure that the husband had been the parent, and most reported cases were at least open to error in that respect. There were other sources of error, but, as a matter of fact, the impression left on his mind was that there was no case scientifically conclusive as to the transmission of tertiary syphilis. He would therefore dissent absolutely from those who believed that no patient with any form of syphilis should be permitted to marry. A man with tertiary phenomena was not likely to have healthy children, nor was the tubercular patient, but the man with tertiary phenomena was not likely to have syphilitic children. And it was safe to say he could not transmit his disease. Even the fluid of his gumma, of his ecthyma, or of his softening node, could not be inoculated.

His wife might have an occasional miscarriage, or have a child born dead, just as might have happened if the husband had had chronic alcoholism, or had been in the last stage of any grave constitutional disturbance, but she was not likely to have a syphilitic child. That, he believed, was the only point in Dr. Porter's remarks on which he had any criticism to make. He thought his general rules were admirable. It would surely not do to say that all syphilitics might not marry, because it would certainly result in ruining many lives. He was personally familiar with a great many persons in whom this unnecessary dread of syphilis had led to prolonged dissipation, or melancholia, or suicide. He was now treating a gentleman who had broken off his engagement with an attractive girl; he had given up his business and was gradually progressing toward the suicidal stage because he was of the opinion that no man had a right to marry with this disease. He was morbid, of course, and Dr. White thought he would probably come out of it. But there had no doubt been a great deal of unnecessary alarm. Dr. Porter's rules were practically those he had adopted, except that he did not require such a long period of freedom from the symptoms. In general figures, he told his patients they must wait four years. But if a man, at the end of three years, had a slight mucous patch he did not, on that account, make the time five years. During fifteen or eighteen years he had seen a great many of these cases, and he had from the start followed this general rule. Fournier's book had been published about 1878, and had been the first well-considered work on the subject which had come under his notice. He had been appointed a teacher on syphilis in the university, and he had practically adopted his rules then, and had never varied very much from them since. Fournier said in effect that syphilis must have been benign; that a period of three or four years must have elapsed; and that the treatment must have been thorough and complete. The speaker said he had never varied much from them, but as time had gone on he had come to place more and more weight on the one element of time, the period that had elapsed after inoculation, and comparatively less upon the thoroughness of treatment and absence of symptoms. And he need scarcely say that in that time there had been a great many patients who had grown up and married, and had had children, and he could not recall an instance where such a marriage had been entered into with his consent and approval where anything had happened to cause him to regret his action. He did not know a single case where, after four years had elapsed before marriage, there had been born a syphilitic child. He thought that was, after all, the most important thing to discuss. If it was a safe rule, it was an easy one, and we could not go far wrong in its application.

If it was not a safe rule he should be glad to hear reasons for considering it unsafe.

Dr. **Edward Martin** said that the subject had been very thoroughly traversed by Dr. Porter, Dr. White, and others. The rules governing it were practically common-sense rules dependent upon certain generally accepted facts. Thus every one granted that a man with syphilis not two years old was likely to give the disease to his wife, and to have diseased children, though this was a rule with many exceptions. It was also granted that a man with syphilis three or four years old was *not likely* to convey or transmit the disease, though this rule had a few exceptions. It was granted that a man with syphilis more than four years old was not necessarily cured, since it was impossible to state positively that late manifestations would not appear, but in so far as conveyance of the disease to others was concerned, he could be regarded as safe. This was a rule with very rare and doubtful exceptions. All the reported cases were open to the criticism of Dr. White. The evidence was, however, rather strong to the effect that the disease could be transmitted to the child when it was impossible to infect the wife directly. Finally, it was granted that syphilis was a curable disease, though there was absolutely no sign or group of symptoms which could be taken as satisfactory evidence of cure. Reasoning from these rudimentary and commonly accepted beliefs, it would seem perfectly proper to allow syphilitics to marry after their disease had become non-contagious. Probably after two years of continued careful treatment the disease ceased to be contagious in the majority of cases. Not always, however, and it was proper to err on the safe side. The period of four years was that generally allowed, and he had never known a physician who had seen or heard of a case of transmission after this period. Even after four years marriage might not be advisable, not because a patient had had syphilis, or was likely to infect others, but simply because of debility or cachexia there was little promise of healthy offspring. The ground for forbidding marriage would be precisely that taken in the case of consumption. There was an exception which he had made to the general rule of forbidding marriage till the contagious stage of syphilis was passed. Although marriage perhaps had had for its cardinal purpose, and had still, the propagation of the species, there were many other reasons why it was entered into. There was the element of association, protection, and mutual interest which could be considered quite aside from the sexual aspect of the case. It happened, he thought, to almost every one, to see cases of buccal chancre acquired by innocent girls from their affianced. He had never hesitated under such circumstances to encourage marriage, warning the patients thoroughly of the dangers of conception till at least four years should have elapsed. With this one exception, he believed he was thoroughly in accord with the rules laid down by Dr. Porter and Dr. White.

Dr. **Arthur Van Harlingen** said that the remarks he had to make were based only upon his own personal experience. Any man practiced in this class of disease, if he had kept careful note of his cases, must have a certain aggregation of personal experience, and he thought that when we brought this experience together it was of a certain amount of value. When the subject of this discussion had first been brought to his notice he had begun to look up the literature, and had found that Fournier's work was practically the only one which could be used for reference. In an article written several years ago he had based his observations on the work of another French writer, Lancereaux, which he had thought excellent from a practical point of view. Fournier, however, was the only author who had given us statistics upon which we could base any conclusions. Aside from this, he thought our individual experience was all we could depend upon. The result of his own experience was as follows:

It did not seem proper for a man to marry as long as he had any of the secondary symptoms, though he had known immunity to result even in these cases. In his own experience, tertiary symptoms had never proved contagious. The man who married with the secondary symptoms ran the risk of conveying the disease to his wife. With tertiary symptoms he could not recall any cases in which a man had given syphilis to his wife. In regard to the conveyance of the disease to the child, it had been said that it was possible for a man, who was in that stage in which the lesions were in all probability not contagious, to convey syphilis to the offspring, but he could not remember any cases in which this had been actually reported. He thought it would be advantageous, if any such cases existed, that they should be recorded. Fournier recorded from sixty to seventy cases of syphilitics who had married at periods extending from nine to twelve months to a number of years. He reported one case in which the man, having syphilis, had married, and after having three or four healthy children he had suffered from tertiary symptoms. His wife had not been infected. He had watched two dozen cases, and had followed some from five to twenty years, and he should not fear any of his patients' marrying after the second year, if they had submitted to a regular course of treatment. He had been in favor of the continuous treatment. His custom had always been to wait until the secondary symptoms occurred, and treat continuously. He had treated a dozen or twenty cases from eighteen months to three years. He could not remember any case in which he had authorized marriage after the second year where the disease had been transmitted. He was aware that this was a much shorter time than was allowed. His own experience was that, after the second year, healthy children could be engendered. Perhaps the standpoint taken by others was a safer one than that which he had taken. He thought it would not be very long before some such question would come up before one of our courts of justice. It seemed to him a question that could only be decided by uniting our experience, and by each person in private practice publishing his own well-recorded cases. His urgent advice was that those who saw such cases should record and publish them. He could not see any other way of securing proper data.

He remembered the case of a young gentleman who had shown the late ulcerative symptoms of syphilis, which had yielded very quickly to proper treatment. After the ulcerative lesions had passed away he had suffered from that peculiar form of myositis resulting in the contraction of the biceps, which had yielded to some extent to treatment, but not entirely. He always had had a certain amount of contraction. After eighteen months of treatment he had asked the speaker if he would allow him to marry. He said he would think it over for several months and then give him his opinion. He did not come back for that opinion. But if he had, and if the speaker had given his consent, the case might have been brought up before the courts. He wondered what his position would have been if this gentleman had married; if he had given him a written opinion that he would in all probability not transmit the disease to his wife nor have a syphilitic child, and then if the worst had happened? What would have been the expert testimony given by his colleagues? He thought that if we could get a body of personal experiences from the gentlemen who see these cases, accurately gathered together, we should have something to go upon. There was really nothing in print except this book of Fournier's. If a case such as he had mentioned were to come before the courts, he did not know what he would have to base his opinion on, except what had been said. He thought it was one of those questions in which the members of the college should publish their opinions, and this he thought would make a body of evidence which would be of use later on.

Dr. **HENRY W. STELWAGON** said he had listened with a great deal of interest to the reading of Dr. Porter's paper and the remarks by the other gentlemen who had spoken. It was a subject, of course, of very large importance and far-reaching. It seemed to him in a question of this kind that an opinion was to be reached only after viewing it in all its aspects and bearings, basing the conclusion upon aggregate observations, and not putting too much weight upon individual experience. There were certain facts upon which he thought all observers were fairly well agreed. One was, that during the active and early stages of the disease marriage was tolerably sure to be followed by dire consequences. Another was, that under the most favorable circumstances at least two years should have elapsed between the contraction of the disease and the assumption of the marriage state. Another was, that after a variable number of years syphilis tended in almost all cases, and probably sooner or later in all cases, to lose its infective activity and transmissibility, so that finally there remained nothing of a specific character to transmit. This length of time depended doubtless upon several factors: the type of the disease, which Dr. Porter had referred to, the prior and concomitant health of the individual, his mode of life, and last, but probably the most important of all, the character and thoroughness of the treatment. In syphilis of a grave type, those cases which we saw from time to time of a more or less malignant character, the greater possibility of present and future risk should not be lost sight of. The same could be said of the disease occurring in strumous individuals and in other persons in delicate health. The syphilitic addicted to the excessive use of alcohol for a long time was doubtless an unsafe husband and procreator. The explanation was to be found in the lessened resisting power. With the exception of these several classes, however, he believed that syphilis was not the grave misfortune it had so often been painted. In the average case of syphilis, occurring in a subject of ordinarily good health, living a temperate life, and who had had intelligent treatment, the power to communicate and transmit the disease was probably, with the exception of a few instances, lost in the course of a few years; and even in the imperfectly treated and neglected cases, judging by general experience, the disease would seem to wear itself out in from two to five years. If this had not been the fact, the examples of hereditary transmission would certainly be much more numerous than observations showed them actually to be. It was, however, the uncertain cases, or the exceptional cases he would say, which gave us concern and made us hesitate. And such cases, we were informed by the records, might occur in those who had been well treated and had carried out all medical directions, and who were or should be presumably entirely free from all contaminating virus. That such exceptions, according to the records, did occur we must all concede; that they were extremely rare must likewise be granted. It had often occurred to him that some of these exceptions were apparent rather than real, that there might have been good and sufficient reasons pointing against marriage, such as an insufficiently long period of treatment, depraved general health, and alcoholism; some might also be attributed to faulty observations, as Dr. White had suggested. He believed himself that persons in good health, of good habits, in whom the disease had been of a mild or average type and had run a favorable course, with no tendency to active recrudescence, and whose treatment had extended over a period of two or three years, during the last year of which there had been no manifestations—that such persons might, if three years or more had elapsed since the date of the contraction of the disease, marry without the slightest risk. Such was the conclusion to which his own observations would lead.

If, however, the question of the marriage of syphilitics was to be viewed purely from a strictly scientific and medical standpoint, and thus cognizance necessarily taken of the rare exceptions and the possibility of disaster recognized, we should probably feel obliged to refuse our professional permission in all cases. But by so doing we would prevent many happy marriages, damage the socially and politically important family life, and tend, moreover, to encourage immoral living. A liberal view of the question, based upon the broad ground of the public welfare and the knowledge that in proper cases the danger was practically *nil*, would not justify us in such a course.

Dr. **A. B. HIRSH** said that there was one phase of the subject which had a half-medical, half-popular aspect, that might be appropriate to mention, and he referred to a point raised in the discussion by Dr. White—that of syphilomania as occurring in some of the chronic cases coming under our care. We were quite well aware that such cases were apt to occur in the intellectual patient, the man who read, and not in the average or ignorant dispensary class; such individuals would be apt to have this subject laid open to their inspection by novelists who dealt with the more material subjects of the day. It was quite interesting in this connection to know that one of the works which had been most widely read recently dealt with this very subject, and individuals suffering from this infection and reading the book would perhaps be confirmed in this very serious view of the subject, and be liable to the mania here discussed.

Dr. **PORTER** said that Dr. White seemed to intimate that he himself possibly thought the tertiary lesions were contagious. He had had no such thought at all, but put tertiary patients under the ban, not on account of transmitting the disease, but on account of their generally broken down condition of health, which would not justify marriage.

In regard to the time, the rule which he had laid down which had guided him for a number of years was to allow two years to elapse after the disappearance of the last syphilitic symptom. The average period of the duration of treatment was about two years, and that would make the duration of the time laid down by Fournier four years after the inception of the disease. Many cases, however, did well in which the treatment was not prolonged more than a year. At the end of that time, after two years had elapsed, that would make the period three years. The time depended on each individual case.

In regard to statistics, Dr. Van Harlingen had well said that the only thing we knew of in the literature on this subject had been written by Fournier, and these statistics, as well as those given by other writers, were very misleading, because it was only within comparatively recent years that syphilis had been so systematically treated as it was to-day, and certainly many of the cases of alleged reappearance of symptoms many years afterward could be explained on the ground of insufficient treatment. He thought that statistics could be collected of the modern methods of treatment of syphilis that would show much more favorable results than older statistics.

Miscellany.

Bladder Gymnastics and Irrigation.—We are indebted to the *Buffalo Medical and Surgical Journal* for advance proof-sheets of an article thus entitled by Dr. Byron H. Daggett, of Buffalo, N. Y.

At the regular meeting of the Lake Erie Medical Association, July 15, 1892, says Dr. Daggett, I read an article describing a method of irrigation of the deep urethra and bladder without the use of a catheter, which was published in the *Buffalo Medical and Surgical Journal*, March, 1892. After the lapse of nearly two years' time, and the additional experience of continual tests, I feel warranted in asserting that nineteen out of twenty patients may be taught to irrigate in this way. The failures will be due to a very small stricture or a very large prostate.

I will briefly refer to a few notes taken since the publication of that paper, and preface these memoranda by repeating the technique of bladder irrigation without catheterization. The materials are a four-quart bag, a tube six feet long with a shut-off within easy reach. The tube is attached to the inlet of the double cannula, its bore being twenty per cent. larger than that of the outlet. The nozzle of the cannula is introduced from one to two inches, according to the size of the meatus, and is made wedge-shaped, in order to fill the varying calibers of urethral meati. It is sufficiently long to be conveniently held in place by grasping the penis behind the glans, at the same time drawing the pendulous portion in line with the fixed urethra. The bag is filled with water, at a temperature of 115° F., to insure more than blood warmth as it flows, and is made bland by the addition of a little glycerin, mucilage, or a few grains of salt or sodium carbonate, and elevated two or three feet above the plane of the pelvis.

The patient must assume a reclining position—a reversed squatting posture—since flexure and gravity are essential factors. He may do this in an ordinary bath tub by resting his back along the incline at his head, so that the trunk is at an angle of forty-five degrees from the horizontal line, flexing the thighs at right angles with the body and supporting the legs at right angles with the thighs. If there is no bath tub at hand a hip bath may be arranged for this purpose, or the patient may posture himself in a low rocking chair, tilted and blocked, so that the body assumes the position described, the legs resting upon another chair or upon a stand.

The nozzle of the irrigator is then introduced, the penis grasped and drawn in line with the fixed urethra, the stop opened, and the water allowed to run, if necessary, until the bag is empty; if it has not passed into the bladder, try again. A peculiar feeling gives warning of the passing of the water through the posterior urethra, the return flow diminishes and escapes in a pulsating stream, when a finger of the right hand is placed over the exit, to divert the entire flow into the bladder, which at first resents the intrusion and ejects after receiving two to three ounces. Repeat this and the bladder becomes more tolerant each time. Three to four flushings are sufficient at each *séance*, and the *séances* may be repeated three times daily if necessary. The novelty and comfort afforded by irrigation sometimes induce patients to overdo at the beginning before tolerance is established. The diminished, pulsating outflow would seem to indicate an anti- or retro-peristaltic action of the accelerator muscle. This process is a coaxing one, in which the gentle pressure of the continuous flow of the hot, non-irritating current and the posture described are essential conditions. The patient acquires a knack at the first success which he realizes, and which I can scarcely describe, that gives him an abiding faith in his ability to flush his bladder at will.

The Action of Iodide of Rubidium.—At a recent meeting of the *Société de thérapeutique*, a report of which is published in the *Journal des praticiens* for May 19th, M. C. Vogt remarked that iodide of rubidium had not much taste and was well tolerated—two advantages for which he recommended it. He had seen it well borne by three patients who could not tolerate potassium iodide. In one of them the symptoms were ameliorated and abbreviated. It remained to be seen if, in syphilis, for example, the specific action was comparable to that of the alkaline iodides. On this point there was a doubt. M. C. Paul recalled the analogy between these facts and the fruitless trials of sodium iodide; this was well tolerated, but did not produce an effect equivalent to that of potassium iodide in the atheromatous. Moreover, this intolerance had been recognized, the author believed, if not always, at least sometimes, when this salt had been given in a diuretic infusion of corn silk. M. Bardet also mentioned that, in cerebral syphilis, this iodide had been known to succeed where the iodide of ethylforminine had failed. In scrofula, iodine itself should be prescribed, and not the alkaline iodides. M. Blondel said that an alkaline iodide combined in a solution with sodium bicarbonate was better tolerated than when taken alone. He said that the intolerance was more marked when the iodic salt was given before eating, and also when given in large doses. The rule should be to administer, in equal parts, the alkaline iodide and sodium bicarbonate. M. Jullien also had observed the intolerance of the organism for potassium iodide. M. Paul recommended the following preparations: 1. Wine of cinchona, nine ounces and a half; tincture of bitter orange peel, two drachms and a half; potassium iodide, one drachm. From one to two tablespoonfuls a day to be taken. 2. Syrup of roasted coffee, sixteen ounces and a half; potassium iodide, two drachms. The same doses daily. In this case it was a question of iodo-tannic preparations, the tolerance of which had been recognized for a long time.

An Eruption on the Palms of the Hands following the Administration of Antipyrine.—At a recent meeting of the *Société de médecine et de chirurgie pratiques*, a report of which is published in the *Progrès médical* for May 19th, M. Fournier made the following communication: A man who had had syphilis for a long time consulted him with regard to an eruption on the palms of his hands which had every appearance of syphilide. The eruption disappeared, and the patient was put on antisyphilitic treatment. A month later the symptoms reappeared, but on one of the fine, scaly elevations there was a vesicle of a reddish color, like that of ham. M. Fournier, not recognizing any syphilitic symptoms, made an inquiry, and found that the patient had taken, the day before, eight grains of antipyrine. He had also taken a similar dose before the preceding eruption, and again the same quantity later on. Four hours after having taken the antipyrine, the patient had noticed the same patches, which simulated palmar syphilis, on the palms of his hands. M. Morel-Lavallée said that these eruptions often had a syphiloid appearance, and generally affected the same spot in the same persons. M. Julien asked if the patient had had at any other time a true palmar syphilide, which had been brought back by the antipyrine, or whether the eruption was due only to the antipyrine. M. Fournier said that his patient had really had a palmar syphilide, but it was to him a matter of doubt whether the eruption was not caused by the antipyrine.

Glycosuria following the Administration of Thyreoid Extract.—In the *British Journal of Dermatology* for June, Dr. W. Dale James, of Sheffield, relates the case of a man, forty-five years old, the subject of psoriasis, who had taken thyreoid extract without producing any effect on the disease, probably owing to the small doses swallowed—one tabloid twice a day. On March 22d he had begun to take four tabloids daily, and at the end of a week had complained greatly of depression, with frequent flushings and palpitations, "his pulse beating all over him." The nervous symptoms had increased and he felt and looked like a very old man. Before another week had elapsed his thirst had become unquenchable, the quantity of urine had greatly increased, the breathing had become embarrassed, the pulse had risen to 132 a minute, and acetone was detected in the breath. On April 4th the urine had the specific gravity of 1·032, and sugar was freely found by all tests. The use of thyreoid extract was at once stopped, and a diabetic diet adopted; the quantity of sugar decreased daily, and on April 13th it could not be detected. The general condition of the patient had steadily improved, and on April 30th he was quite well, except for the psoriasis, which had not been improved by the treatment. This is, the author says, so far as he has been able to ascertain, the first reported case of glycosuria following the administration of thyreoid extract, although polyuria has been noticed more than once.

Proposed Variations of the Operation of Symphysiotomy.—At a meeting of the Gynæcological Section of the Eleventh Congress of Russian Physicians, held in St. Petersburg in December, 1893, a report of which appears in the *Centralblatt für Gynäkologie* for June 9th, Dr. Fenomenoff read a paper in which he remarked that, inasmuch as after the operation of symphysiotomy the pelvis returned to its original narrowness, the possibility of being obliged to resort to a second operation on a subsequent occasion was not done away with. With a view to preserving the amplitude of the pelvis obtained during the operation the author had had the idea of maintaining the separation between the cut ends of the two pubic bones by inserting a piece of bone between them. He described two methods of performing this operation. 1. By the first method a cutaneous incision was made beginning a finger-breadth above the upper border of the pubic bone, on a line with the pubic tubercle, or between the latter and the external inguinal ring. The incision is carried in a crescentic form to the corresponding point on the other side, the convexity being directed downward and extending to the neighborhood of the lower border of the symphysis. In this way a flap is made which is easily raised. Thus on either side of the symphysis, from 2 to 2·25 centimetres from the median line, an incision is made through the periosteum down to the bone. The two incisions begin at the upper border of the symphysis and join each other below. Thus there is formed a triangle the base of which is constituted by the upper border of the symphysis, and the apex of which corresponds to the ligamentum arcuatum. After the periosteum has been raised to a certain extent a corresponding bony flap having the symphysis for its middle point is formed by means of a chisel or saw. Then the delivery is to be proceeded with. After its completion the periosteum is to be loosened from the lower half of the bony flap, and the corresponding bony base to be separated with a bone-forceps and forced downward in such a manner that the upper border of the flap comes to be situated at the point originally occupied by the middle of the symphysis; consequently the two pubic bones must be separated from each other at this situation to the extent of from 2 to 2·5 centimetres, thus notably increasing all the pelvic dimensions except the distantia Litzmanni, which is somewhat shortened.

2. In the second form the cutaneous incision is the same as in the first. The bones are sawed through in a parallel direction on the two sides. The section begins very much as in the preceding method, but ends at the level of the center of the symphysis. The two vertical sections are connected with each other at this level by a transverse section. Thus there is formed an oblong quadrangular bony flap from 4 to 4·5 centimetres long and of a width equal to half the height of the symphysis. This flap is held upward and thereupon the ordinary operation of symphysiotomy is completed upon the lower half of the symphysis. After the conclusion of labor the bony flap formed of the upper half of the symphysis is brought down and forced between the cut surfaces of the lower half of the symphysis. The amplification of the pelvic dimensions is a little greater by this method than by the other.

The author stated that this operation had been performed a few times on the dead body and on animals, and that dogs bore it very well. The account concludes with the statement that the reading of the paper was followed by a lively discussion.

Sodium Nitrite as a Therapeutic Agent.—The *Practitioner* for May contains an article on this subject by Dr. Gordon Sharp, of Edinburgh, in which he relates his experience with this nitrite. Sodium nitrite, he says, is comparatively stable, and its solubility renders it most useful and easy of administration. It can not be inhaled, but it has the great advantage of relaxing all the vessels. It has been stated that sodium nitrite affects chiefly the vessels of the upper half of the body, but in the author's experience the dilatation has been a general one. With regard to the dose, the author states that from twelve to twenty grains have been given in epilepsy, but he does not believe that the salts were pure, as much smaller doses are apt to cause alarming symptoms, such as nausea and syncope. After an extensive experience with this salt, he concludes that from two to five grains are quite enough, and that from one to four grains would be a better standard. During the administration of the salt, in a large number of cases, the patients showed such symptoms as vomiting, syncope, and headache. These are due to the rapidity with which the blood pressure is lowered, and the following mixture is used by Dr. Gordon as a primary stimulant and sedative: Fifteen-minim doses of aromatic spirit of ammonia with one or two minims of tincture of capsicum; five minims of solution of hydrochloride of morphine, and chloroform water to half a fluidounce.

In all respiratory affections the author has been struck with the difficulty of producing the physiological effect of the nitrites on the pulse, as tested by the finger. For example, in bronchitis three grains of sodium nitrite may be given four times a day and continued for two or more days without the pulse revealing any softening when examined by the finger; while the same dose given in a case of angina pectoris or irregular heart action, without any prominent additional respiratory affection, would cause a marked change in the character of the pulse after one or two doses. Dr. Gordon relates a number of cases in which sodium nitrite had been employed, from which the following conclusions may be drawn: 1. Sodium nitrite, being stable, may replace the less stable amyl and ethyl nitrites. 2. It dilates all the arterioles rapidly, and so relieves the heart quickly. 3. Disagreeable symptoms may be overcome by combining it with ammonia water or spirit of chloroform and small doses of morphine. 4. It is most useful in anginal affections and in irregular heart action. 5. To obtain the most benefit from its use it should be continued some time after all symptoms have passed away. By this means the heart is able to regain its tone and so to repair itself. 6. The maximum dose is four, or at the most, five grains, and generally one or two are enough. 7. Graves's disease would appear to be aggravated by it. 8. Bronchitis and asthma, in the author's experience, are not benefited by its use.

Sulphonal in the Treatment of Whooping-cough.—The June number of the *Practitioner* contains the following prescription: Sulphonal, one grain; creasote, two minims; syrup of tolu, water, each, two ounces. Two teaspoonfuls of this mixture are to be given every two hours.

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THE
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A WEEKLY REVIEW OF MEDICINE.

EDITED BY
FRANK P. FOSTER, M.D.

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